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FINANCIAL TIMES

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The anger that fuels the man

Robert Reich, Page 11

Political football

Broadcasting victory for Cecci Gori

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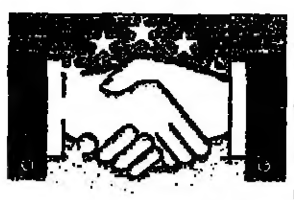

EU integration

A reversal of orthodoxy

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World Business Newspaper

WEDNESDAY MARCH 6 1996

UK abandons plan to lease F-16 fighters from US

The UK Ministry of Defence abandoned a plan to lease US F-16 fighters and will upgrade its existing Tornado fighters to fill a gap until the Eurofighter, being developed by Britain, Italy, Germany and Spain, comes into service. British Aerospace will be given a £125m ($192.5m) contract to fit improved electronics to the F3 Tornado fighters which will allow them to carry the latest short and medium-range missiles. Page 12

RJR Nabisco tempts shareholders: RJR Nabisco, US tobacco and food group fighting efforts to force it into a break-up, tried to win shareholders' allegiance by announcing a 23 per cent increase in its dividend and a $100m (£64.9m) share repurchase programme. Page 13

Tokyo move on bail-out impasse: Japan's government offered further talks with the main opposition party about a controversial plan to spend public money on bailing out bankrupt housing loan companies, or *jusen*. Page 12; Mad hatter enters fray, Page 6; Editorial Comment, Page 11

UK told to reconsider deportation

British home secretary Michael Howard was told by a judge to reconsider the decision to deport Saudi dissident Mohammed al-Massaari (left). The judge ruled that Mr Howard had not established that Mr Massaari would be safe in Dominica, the Caribbean island to which he was due to be expelled. The government decided to deport Mr Massaari after pressure from the Saudi government, which had warned that arms deals could be jeopardised if the Islamic dissident remained in Britain.

Footsie hits intra-day record: The FT-SE 100 Index recorded a record intra-day high of 3,792.5 in early trading because of hopes of a cut in base rates later this week and a strong performance by Wall Street on Monday. It closed at 3,777.1. London stocks, Page 26; World stocks, Page 30

BA attacks anti-trust move: British Airways attacked Lufthansa of Germany and United Airlines of the US for deciding to apply for anti-trust immunity, saying it was contrary to the spirit of a more competitive airline industry. Page 4; BA to launch internal TV service, Page 7

Bridgestone in grand prix challenge: Bridgestone of Japan, the world's second-largest tyre maker, is to challenge Goodyear's tyre supply monopoly in Formula One grand prix motor racing. Page 4; Jaguar unveils E-type 'successor', Page 7

Beijing seeks to end budget deficits: China hopes to eliminate its budget deficit by 2000, but faces big challenges in boosting revenues and controlling expenditures, finance minister Liu Zhongli told parliament. Page 6

States face claims over EU laws: European Union governments must compensate individuals and companies for losses resulting from the states' failure to implement EU laws correctly, the European Court of Justice ruled. Page 12

Factory orders may boost US economy: The US Commerce Department said new orders for manufactured goods rose 0.5 per cent in January. The rise indicates that the economy may rebound this spring. Page 5

Kmart plans eastern Europe sale: Troubled US discount store group Kmart looks set to raise a badly-needed $117.5m (£76.2m) by selling its 13 stores in the Czech and Slovak republics to UK retailer Tesco. Page 13

CS Holding 5% ahead: CS Holding, financial services group built around Credit Suisse, reported a 5 per cent rise in 1994 net income to SFr1.4bn ($1.2bn). Page 13; Lex, Page 12

Coles Myer drops break-up plan: Coles Myer, Australia's biggest retailer, said it would not to pursue moves to break up the company into separately-listed operating units. Page 13

Services lose their pictures: Britain's Ministry of Defence has "lost" 161 works of art from its inventory of 900. Some items are missing because military personnel often take office decorations with them when they move. Page 7

World Cup Cricket: South Africa had a 160-run victory over the Netherlands in Rawalpindi, Pakistan. West Indies cricket captain Richie Richardson announced he would quit international cricket altogether after the tournament.

■ STOCK MARKET INDICES

New York: lunchtime		
Dow Jones Ind Av	5,603.94	(+2.89)
NASDAQ Composite	1,091.32	(+6.44)
Europe and Far East		
CAC40	2,061.94	(-13.37)
DAX	2,479.03	(-8.96)
FT-SE 100	3,777.1	(+8.5)
Nikkei	20,183.87	(+119.99)

■ US LUNCHTIME RATES

Federal Funds	5¼%
3-mth Treas Bills: Yld	5.01%
Long Bond	94 15/16
Yield	6.378%

■ OTHER RATES

UK: 3-mo Interbank	6 1/16%	(6 1/8%)
UK: 10 yr Gilt	97 7/16	(96 5/16)
France: 10 yr OAT	104.8	(105.06)
Germany: 10 yr Bund	97.61	(97.95)
Japan: 10 yr JGB	98.432	(98.386)

■ NORTH SEA OIL (Argus)

Brent 15-day (Apr)	$17.70	(17.44)

■ GOLD

New York: Comex		
(Apr)	$394.6	(395.2)
London:		
close	$393.3	(393.8)

■ DOLLAR

New York: lunchtime		
£	1.52925	
DM	1.47645	
FFr	5.057	
SFr	1.2005	
Y	105.055	
London:		
£	1.5278	(1.5282)
DM	1.4789	(1.4758)
FFr	5.066	(5.0587)
SFr	1.2021	(1.2015)
Y	105.125	(105.14)

■ STERLING

DM	2.2594	(2.2553)
Tokyo $ close:	Y 105.4	

Albania	LEK 220	Germany	DM4.00	Lithuania	Lts 15.00	Qatar	QR13.00		
Austria	Sch37	Greece	Dr400	Lux	LFr75	S.Arabia	SR12		
Bahrain	Din1.250	Hong Kong	HK$20	Malta	Lm0.65	Singapore	S$4.30		
Belgium	BFr75	Hungary	Ft230	Morocco	MDh16	Slovak Rp	Sk65		
Bulgaria	Lw130.00	Iceland	IKr230	Neth	Fl 4.75	S. Africa	R12.00		
Cyprus	C£1.20	India	Rs75	Nigeria	Naira90	Spain	Pta250		
Czech Rp	Kc60	Israel	Shk7.90	Norway	NKr20.00	Sweden	SKr20		
Denmark	DKr18	Italy	L3200	Oman	OR1.50	Switz	SFr3.70		
Egypt	E£5.00	Japan	Y500	Pakistan	Rs40	Syria	S£65.00		
Estonia	EKr 22	Jordan	JD1.50	Poland	Zl 5.50	Tunisia	Din1.750		
Finland	FM15.50	Kuwait	Fils.650	Portugal (m'land)	Es240	Turkey	L70,000		
France	FFr11.50	Lebanon	L£3,000			UAE	Dh12.00		

Israel steps up war on Hamas

Troops enter West Bank and villages are put under curfew

By Julian Ozanne in Jerusalem, Mark Dennis in Gaza and Patti Waldmeir in Washington

Israeli and Palestinian troops intensified their war on the Hamas Islamic movement yesterday amid international efforts to halt the worsening violence and save the Middle East peace process.

Israel dismissed the offer of a ceasefire ordered by dismayed Hamas political leaders and sent troops into the West Bank to seal the homes of suicide bombers and round up activists. Hamas factions have been responsible for a series of suicide bombings in Israel over the past 10 days which have left 57 people dead.

The Israeli government rejected the offer of a ceasefire, conditional on a halt to action against Hamas activists, following the failure of two previous ceasefire calls by Hamas leaders.

Mr Shimon Peres, the Israeli prime minister, who is fighting for his political survival ahead of elections in May, banned Palestinians from travelling between self-ruled enclaves, and placed several villages under 24-hour curfew. "This is the beginning. They had their say, they'll get a response," he said.

President Bill Clinton of the US sent bomb-detection equipment and counter-terrorism experts to Israel yesterday as part of a US effort to buttress the country's security and provide reassurance. "The US has always stood with the people of Israel through good times and bad, and we stand with them today," he said after an emergency meeting of his top foreign policy advisers.

Mr Clinton pledged US help to defeat the terrorist campaign and to revive the peace process. US intelligence officials would be sent to Israel to strengthen its anti-terrorist operations.

He said Washington would pursue diplomatic channels to isolate Iran and other countries that support Hamas. On Monday Mr Clinton sent strongly-worded letters to Jordan's King Hussein and Mr Hafez al Assad, the Syrian president, urging them to clamp down on Hamas activities abroad. The US campaign to isolate Hamas abroad received support from Britain and other European Union countries. Mr Michael Heseltine, the UK deputy prime minister, warned Hamas activists living in Britain that the government would not tolerate support for terrorism.

In Palestinian-ruled Gaza, Mr Mohamed Dahlan, internal security chief, said the self-rule authority was taking drastic steps to destroy Hamas politically and militarily.

A state of emergency was in force throughout the West Bank and Gaza Strip and security forces had started a manhunt for Israel's list of the most wanted activists. "We are trying to isolate Hamas from the people, control the mosques and stop their financing," said Mr Dahlan. But other senior Palestinian officials warned that Israel's tough security measures could undermine the fragile peace and that collective punishment, such as house demolitions and travel bans, would breed resentment.

Mr Ahmed Qurie, chief Palestinian negotiator, said Israel's decision to give its forces freedom to strike at terrorists inside Palestinian controlled territory "will be a great mistake because it will weaken the Palestinian authority". Israeli officials said yesterday's military steps stopped short of a serious violation of Israeli-Palestinian accords.

Lex, Page 12

Beijing's actions near Taiwan waters may cause severe disruption to shipping

US, Japan condemn Chinese missile test plans

By Laura Tyson and Peter Montagnon in Taipei and Tony Walker in Beijing

The US and Japan yesterday condemned plans by China to stage week-long missile tests in waters near Taiwan from Friday. Shipping companies warned of severe disruption to busy sea lanes in the region and Taipei share prices fell sharply.

Beijing's move comes in the middle of campaigning for Taiwan's first direct presidential elections, to be held on March 23. It also follows warnings that China might take military action if the election winner pushed for independence.

The missile tests will be closer to Taiwan than previous exercises in July and August last year, and appear designed to emphasise China's ability to blockade Taiwanese ports. The test areas are less than 50km from the ports of Keelung and Kaohsiung, the world's third largest container port.

In Washington, Mr William Perry, US defence secretary, attacked China's decision. "I think it is a very bad mistake on their part to put the impact area so near to Taiwan," he told the Senate armed services committee. "I deplore that decision on their part and I will express my concern to them [China]."

Premier Li Peng of China said that, while his country had been working for peaceful reunification, "we shall not undertake to renounce the use of force". He was speaking in a state of the nation address to the opening session of the National People's Congress, China's parliament.

Mr Lee Teng-hui, Taiwan's popular president who is seeking a second term, sounded a note of defiance. "The question they [China's leaders] are most scared of is Taiwan's democratisation," he said. "If that democratisation is successful, the 1.2bn people on the mainland will think that if Taiwan can choose its own leader, then why can't the mainland?"

The Taiwanese government insisted that the elections would not be disrupted, but the defence ministry put forces on high alert.

Shares in Taipei tumbled 1.3 per cent yesterday, with the weighted index down 62.49 to 4,792.74. Mr Lien Chan, prime minister of Taiwan, said the election would not alter the ruling Kuomintang party's objective of achieving eventual unification.

Mr Hiroshi Hashimoto, Japanese Foreign Ministry spokesman, said in Tokyo that the Chinese missile tests would not be "desirable for peace and stability" in East Asia.

The official Xinhua news agency said that the People's Liberation Army would conduct surface-to-surface missile tests in waters off northern and southern Taiwan from March 8-15.

"For the sake of safety, the Chinese government requests the governments of relevant countries to notify ships and aircraft not to enter the said sea areas and air spaces during this period," Xinhua said. Mr Keny Chou, London representative of the Yang Ming Line, a Taiwanese container group, said the need to steer clear of the missile tests "would have a big impact on shipping in the strait".

Shipping under threat, Page 6

Military units marched in Beijing as the Chinese National People's Congress opened amid growing tensions with Taiwan Picture: Reuter

Brussels tackles Fifa over royalties on footballs

By Patrick Harverson in London and Emma Tucker in Brussels

The European Commission yesterday launched a flying tackle against Fifa, football's powerful governing body, over royalties charged on sales of footballs stamped with its logo.

In dawn raids, offices of national football associations in the UK, France and Denmark were searched by Commission competition inspectors after complaints by the international trade body representing football manufacturers.

Fifa insists on approving all balls used in international matches. From January it has charged a SFr1.50 ($1.25) fee on each ball stamped with the necessary logo "Fifa-approved".

Manufacturers say this extra cost is unfair because their balls were already of sufficient quality. They also fear balls could be just the beginning, with Fifa going on to seek payments for putting its logos on shin pads, boots and goalkeeping gloves.

Additionally, they argue that the sale of all footballs could be affected because international matches are showcases for the sport and consumers generally will demand footballs stamped with the same logo.

"We are talking about millions of balls," the Commission said. Eight million of the 40m balls produced annually are used in top level matches around the world.

The Commission believes Fifa may be abusing its dominant position. Although national football associations are not directly involved in the new Fifa ball licensing scheme, the Commission's inspectors are believed to have raided their offices in the hope of finding correspondence between the associations and Fifa.

The Commission also feared Fifa might have been acting collusively with national football associations in imposing the levy by insisting that balls for club games carry the logo.

Fifa's headquarters in Zurich remained closed to Commission inspectors yesterday as

Continued on Page 18

Italian film mogul projects bigger image, Page 2

First Brazilian rail concession sold to US-led consortium

By Jonathan Wheatley in Sao Paulo

Part of Brazil's national rail network was sold off yesterday in an auction marking the start of the most ambitious project under the government's privatisation programme.

A 30-year concession to operate 1,621km of track in the centre-west of the country was bought by a consortium led by the Noel Group of the US for R$62.36m (US$63.4m), a premium of 3.6 per cent over the minimum price of R$60.2m.

The other members of the consortium are Western Rail Investors, Bank of America International Investment Corporation, Chemical Latin America Equity Associates and DK Partners. Both the Noel Group and Western Rail have made recent acquisitions in US rail services.

Mr Varel Freeman, managing director of Chemical Latin, said the consortium would invest in modernisation to expand freight capacity. "We are extremely pleased to have won the concession and are looking forward to helping to modernise Brazil's railway operations," he said. "We see tremendous potential for expansion."

Brazil's railways are used almost exclusively for freight; cheap passenger travel is mostly provided by coach operators. Despite the country's large size, however, only about 7 per cent of freight is transported by rail, with most of the remainder being moved by road.

The whole network – the RFFSA – will be sold in six auctions and is expected to raise a total of about US$1.4bn. Management of 22,000km of track will pass into private hands, along with 1,400 locomotives and 36,000 wagons. Modernising the network will require investments of an estimated US$4bn. The network has suffered badly from underinvestment in recent years; 47 per cent of its locomotives are out of service, against an international average of 17 per cent.

The Noel Group consortium beat off a rival bid by a consortium of Brazilian companies led by a subsidiary of state mining giant Companhia Vale do Rio Doce. Payment will be made in instalments, with a down payment of 10 per cent.

Payment is in cash, unlike earlier privatisations which allowed payment in domestic debt certificates. These were accepted at face value despite trading at discounts of up to 40 per cent.

Yesterday's sale will be followed on April 15 by the centre-east region, to be sold at a minimum price of R$316.9m. Other dates and minimum prices have yet to be set.

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NEWS: EUROPE

UK issues warning on 'sham' EU unity

By David Buchan in Paris

Britain yesterday warned its European Union partners against seeking "sham displays of unity" in EU foreign and security policy, and instead proposed a series of practical measures to improve the preparation, flexibility and rapidity of EU decisions.

In a Paris speech setting out the line Britain will take on foreign and security policies in the intergovernmental conferences, Mr Malcolm Rifkind, the UK foreign secretary, effectively rebuffed the two main initiatives floated by France and Germany last week.

Paris and Bonn called for the Western European Union (WEU) defence organisation to be integrated into the EU, and for a new notion of "constructive abstention". Countries objecting to some EU foreign or security policy would simply stand aside and not block others from pursuing it.

Reiterating Britain's opposition to any "subordination" of the WEU to the EU, Mr Rifkind also told the French International Relations Institute that "constructive abstention could be useful where a country supports a proposal but for constitutional or other reasons is unable to participate fully". He cited the case of Germany which, though unable to field peacekeeping troops in Bosnia, provided political and financial backing to others' forces.

But "constructive abstention", while it constituted a welcome admission that foreign or security policies could not be decided by majority verdict, would still not resolve real disagreements between EU members, Mr Rifkind said.

France, he suggested, would not have bowed to the anti-nuclear majority within the EU and abstained "constructively" by refraining from, or cutting short, its recent nuclear test series. "Dissenters cannot surely be expected to give political or financial support to the policies with which they disagree," said Mr Rifkind.

Mr Rifkind focused yesterday on practical ways of improving EU foreign and security policy decisions, just as a year ago the UK had proposed several practical steps to improve WEU and EU co-ordination without merging them.

He suggested EU members should put more diplomats and money at the disposal of the Council of Ministers to make it better prepared for, and more responsive, to crises. He also gave qualified endorsement to France's proposal for a new EU foreign policy representative.

"Like France, Britain sees possible attractions in appointing a single figure to represent the foreign policy of the Union to the outside world," he said, though the person should be the Council's "servant, not its chairman". This hardly constitutes the high-profile appointment that Paris originally had in mind. However, France may be able to use it as a lever on Germany, which is proving reluctant to support the French idea for a new post.

In his Paris speech, Mr Rifkind played on France's recent nuclear disagreements with many of its EU partners to stress the risks of pushing EU ambitions in foreign and security policy too far.

Ian Davidson, page 10
Editorial Comment, page 11

Bundeswehr finds itself short of conscripts

By Michael Lindemann in Bonn

The 340,000-strong Bundeswehr, Germany's armed forces, is likely to have "considerable problems" finding enough conscripts in future because a soaring number of young people prefer alternative forms of public service, Ms Claire Marienfeld, the Bundeswehr's ombudswoman, says.

A record number of young male Germans – 160,659 – refused to serve 10 months in the armed forces last year, choosing to work in such alternatives as hospitals, even though the term is 13 months. The Bundeswehr could only fill its ranks by calling up older recruits who had not yet done their 10-month service, according to Ms Marienfeld's annual report.

Her warnings are likely to fuel discussions about the Bundeswehr's future following a surprise French decision to opt for a professional rather than a conscript army. Ms Marienfeld insisted Germany stick to military conscription, popularly seen as "citizens in uniform", but that more should be done to improve the image of the armed forces.

She said the Bundeswehr should appear in school books which now make no mention of the armed forces. Soldiers should be encouraged to wear uniform more often, and exercise in the open countryside, not just on military bases. "A Bundeswehr which makes no noise at all is no good," she told a press conference.

Young people had an unnecessarily negative image of the Bundeswehr. Ms Marienfeld said she had begun talks with a number of churches after it emerged that one church had offered all the young people in its parish help that bordered on a "recommendation" to refuse armed service.

The ruling coalition last week approved a draft bill to fine or to jail for up to three years those who insult the army. The bill follows conservative outrage at court decisions endorsing anti-war protesters' right to use the slogan "Soldiers are murderers".

Despite the numbers opting out, the Bundeswehr's standing has improved partly because German soldiers had a greater role in international peacekeeping such as the mission in former Yugoslavia.

The report also highlights the problems of German soldiers serving in multinational units such as the Strasbourg-based five nation Eurocorps. Because French law forbids German soldiers to be armed in France, Germans doing sentry duty at the Strasbourg barracks were armed with sticks.

Aznar may find opposition in his party to Catalan demands as González awaits the outcome

Kingmakers of Catalonia put a high price on the PM's chair

By Tom Burns and David White in Madrid

Catalan nationalists yesterday raised the stakes for helping the centre-right Popular party (PP) form a government after its narrow win in the general elections last Sunday by calling for a prior formal recognition of Catalonia's separate identity.

The demand, which runs counter to the PP's guiding *principle of no discrimination* among Spain's regions, underlined the acute difficulties facing the centre-right leader, Mr José María Aznar, as he searches for allies to enable him to win a parliamentary vote of confidence next month and become prime minister.

Mr Rodrigo Rato, the PP's parliamentary spokesman who has been appointed by Mr Aznar as chief negotiator with the Catalan nationalists, said that talks on creating a stable majority could take several weeks.

These negotiations have displaced discussions Mr Aznar had planned with trade unions – had he gained a clear electoral win – to establish a social pact for wage moderation and job creation.

The political uncertainty that resulted from Sunday's vote – the PP is 20 seats short of a majority in parliament – prompted fresh falls on the Spanish stock market after shares prices tumbled on Monday. Madrid's general index lost 4.93 points yesterday, a fall of 1.5 per cent.

Analysts forecast the sell-off would continue in the absence of any clear signs of a new government majority.

> 'Catalonia is a nation and its separate identity has to be recognised. The PP has never subscribed to this'

The Bank of Spain issued its own negative view of the political stalemate by keeping its key intervention rate unchanged at 8.75 per cent yesterday at its 10-day auction for bank certificates.

Prior to Sunday's election, the markets had confidently expected that the central bank would respond to falling inflation with a rate cut.

Catalonia's Convergence and Unity (CiU) coalition, which has run the Barcelona-based autonomous government, the Generalitat, for the past 16 years and strongly stamped its nationalist policies on the area, holds the key to a possible Aznar-led government.

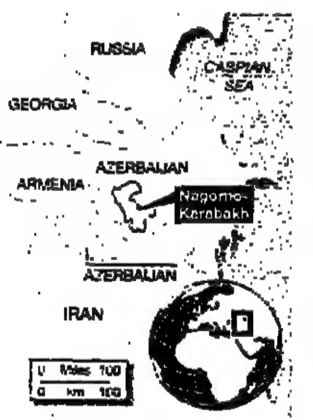
The Socialist party, led by Mr Felipe González, the outgoing prime minister, and other leftwing parties gained 166 seats in parliament. Only the CiU can provide the centre-*right with a working majority* by adding the 16 members it returned to the Madrid parliament to the 156 elected on the PP lists.

The price for CiU support is, however, one that the right-wing in Mr Aznar's party could find impossible to pay. It involves the extension of the home rule process in Catalonia that Madrid-based conservatives feel has already gone far enough.

Mr Pere Esteve, a senior spokesman for the Catalan nationalists, said yesterday that the CiU's fundamental difference with the PP was over their respective understanding of what the "Spanish state" really was.

"Catalonia is a nation and its separate identity has to be recognised," Mr Esteve said. "The PP has never subscribed to this."

Oil may smooth way for Karabakh peace



By Bruce Clark, Diplomatic Correspondent

Pressure is mounting on Armenia and Azerbaijan to settle their bitter dispute over the enclave of Nagorno-Karabakh so as to clear the way for a broader resolution of energy and transport issues in the strategically vital region.

Mr Yevgeny Primakov, Russia's foreign minister, has thrown Moscow's weight behind a high-profile effort by the 53-nation Organisation for Security and Co-operation in Europe to settle one of the most bitter wars on ex-Soviet territory. He praised as "good and well-balanced" a draft peace plan which was presented to both sides this week by Mr Flavio Cotti, the Swiss foreign minister, whose country occupies the OSCE's rotating presidency.

Mr Primakov, in the latest sign that Russia is edging away from its hitherto pro-Armenian position, called the plan a "compromise between extremes" and deplored the fact that both sides were "sticking to maximalist positions."

Details of the OSCE plan have not been disclosed, but it is assumed to provide a substantial measure of self-rule for the Armenian-populated enclave of Karabakh, while recognising the ultimate jurisdiction of Azerbaijan.

Armenian forces managed in 1993 to secure control both of Karabakh, which has proclaimed independence from Azerbaijan, and large swathes of surrounding territory. Azeris blamed their defeat on covert Russian support to the Armenian side.

The OSCE agreed in December 1994 to deploy a multinational peacekeeping force in the region – but only if the *de facto* ceasefire was turned into a formal cessation of hostilities, something which has proved unexpectedly elusive.

Up to now, sticking points have included the status of the Lachin corridor, which links Karabakh with Armenia proper, and the strategic town of Shusha, the highest point of the mountainous enclave.

Azerbaijan has said it would accept a multinational force in Lachin, with a mandate to stem the flow of armaments to the Karabakh Armenians, but not the continuation of *de facto* Armenian control.

Turkish officials and businessmen have added their voice to calls for an early settlement – on the grounds that peace in Karabakh is a pre-condition for the establishment of Ceyhan in southern Turkey as the main terminal for the oil which will soon start flowing from the Caspian Sea in huge quantities.

A settlement of the conflict, in which at least 20,000 people have been killed, is needed both to inspire confidence in the western companies which would build and finance the pipeline, and because the war zone itself is one of the most promising routes.

Italian film mogul projects bigger image

The Rome apartment of Vittorio Cecchi Gori doubles as a cinema, entirely in keeping with his status as Italy's biggest film producer and distributor.

The partition wall with the dining room serves as a screen; the black velvet divans are turned away from a magnificent view of the ancient city to become front stalls; and from behind a desk a Tibetan scroll painting lowers automatically to reveal a projector.

The stocky Mr Cecchi Gori, 53, is responsible for producing three-quarters of all films made in Italy, thanks to a business built by his father, Mario, who died in 1993. Films are his first passion and the core of the Cecchi Gori group's L270bn (£113m) turnover.

But he has big ambitions well outside the film business. This he has just demonstrated by scooping the television rights to Italy's league soccer for the next three years for L639bn from beneath the nose of the Rai state broadcaster. Football, he hopes, will secure a good audience share for Telemontecarlo and Videomusic, two small channels he bought last year.

On his own admission he is riding the crest of a wave. "This is a wonderful period for me," he confessed last weekend after winning the TV football rights. "My heart is set on winning the Oscar for *Il Postino* which will be decided on March 25. . . . Then I've won the football on TV: my own television stations are taking off and Fiorentina [the football club he owns] is in great form. . . ."

He has always lived so much in his father's shadow that it has only been possible for outsiders to measure the size of his ambition in the past two years. The evidence has gone surprisingly unrecognised in the Italian press.

He acquired Fiorentina in 1990 – an essential high profile possession of Italian magnates; he is married to Rita Rusic, a platinum blond starlet (whose business judgment he relies upon heavily); and he became a senator for the former christian democrat Popular party (PPI) in 1994.

When he bought his television stations last year, the potential conflict of interest with his being a senator was never raised. In the case of former premier Mr Silvio Berlusconi, the conflict of interest with his Fininvest media empire became an important issue the moment he entered politics. The two men started out as friends and set up Penta, a joint film/television venture, but they have since fallen out in a big way.

Vittorio Cecchi Gori: ambitions well outside the film business

It goes without saying that some of the harshest attacks on Mr Cecchi Gori's football coup have come from the Berlusconi camp (which also lost out in the bidding). They accuse Mr Cecchi Gori of backing the political ambitions of Mr Lamberto Dini, the caretaker prime minister, and of being protected by the government. He has also been accused of using his own channels to defend his acquisition of the soccer rights. And a consumers' group has complained that, as owner of a major league team, Mr Cecchi Gori was both judge and beneficiary of the rights auction that could be worth L1,251bn over the next three seasons.

The 38 clubs in the football league appear to have made their choice on cash alone, opting for the highest sum on offer. Mr Cecchi Gori's two channels cover only 75 per cent of the mainland and islands, and accounted for only 2.7 per cent of the total television advertising revenues of L3,555bn last year. Videomusic, which specialises in youth programmes and music, and Telemontecarlo, a general channel, generated total income of less than L150bn in 1994.

The Rai claims such small fry lack the technical and financial resources to serve the Italian public with their most popular sports fare.

Mr Cecchi Gori sees matters differently. He has acquired two television concessions cheaply: he paid little more than L150bn for the loss-making channels, and assumed some L100bn more in debt, pushing group indebtedness to L220bn. Most of the Telemontecarlo purchase was funded with a L60bn bank loan guaranteed by the station's shares and financed through cash flow from his group controlled through the family holding Finma which made a net profit of L25bn in 1994.

To raise his share of the market, Mr Cecchi Gori is exploiting his film library, the biggest in Italy. Not needing to invest in what is normally a costly part of Italian channels' annual budgets allows him to splash out on sport which he regards as crucial for boosting audiences.

With good films and top quality sport, he reckons to raise his share of the audience to 10-15 per cent. If Mr Berlusconi's three channels, with 45 per cent of the audience, have been valued at around L7,000bn, then Mr Cecchi Gori's unprecedented spending on football rights is easier to understand.

But he will have to sell on some local rights, ensure national territory is covered, and probably tie up a deal with a foreign partner. Otherwise he will be vulnerable in a market that he is helping to make more competitive.

Robert Graham

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EUROPEAN NEWS DIGEST

Moscow drops share tender

The Russian government will retain state control of Rybinsk Motors, overturning a plan to tender 37 per cent of the troubled engine manufacturer's shares after a potential foreign buyer withdrew. The decision is a further indication of the change of government thinking about the country's controversial privatisation programme and suggests the state may be planning to play a more active role in supporting strategic industries.

Mr Alexander Kazakov, the newly-appointed privatisation chief, had already indicated that he would slow Russia's privatisation programme drastically, and would aim to manage state property more effectively. Only five companies – out of an original 30 – remained on the privatisation list for this year, Mr Kazakov said.

Rybinsk Motors, one of Russia's biggest manufacturers of aircraft engines, was declared insolvent last year. It has fiercely opposed the government's privatisation plans, claiming that they threaten the country's strategic interests.

Gazprom, Russia's giant gas monopoly, has expressed an interest in the plant, believing its technology could be adapted to produce gas turbines. *John Thornhill, Moscow*

German health system in red

Germany's health insurance system ended last year with a DM7bn ($4.7bn) deficit last year, after a DM2.4bn surplus in 1994, prompting fears that contributions may have to rise unless savings are made.

Mr Horst Seehofer, the health minister, warned that contributions, divided equally between employers and employees, could jump by one percentage point to 14.4 per cent of earnings unless agreement is reached between the federal government and the Länder (states) on disputed plans to limit the costs of hospital care.

Last year's deficit was lower than the DM10bn-DM12bn recently forecast by health insurance officials. Mr Seehofer said the move into deficit slowed markedly in the final three months, with the 1995 shortfall in western Germany dropping to DM4.15bn from DM5.8bn at the end of September. However, the deficit in eastern Germany grew to DM2.85bn from DM1.7bn in the first three quarters. *Peter Norman, Bonn*

Poland's pension plans

Poland's planned new pension funds will be endowed with *only minority stakes in state-owned companies* under the government's social security system reform plan, according to Mr Wieslaw Kaczmarek, the privatisation minister. "Funds' stakes will be passive ones," he said yesterday, saying that only financially sound companies would be earmarked to assist the social security reforms.

The finance and labour ministers have promised to prepare a bill on the new pension funds during the first six months of this year, and the outline of the government's social security reform awaits a debate in parliament.

Under the scheme, the funds, contributions to which would be tax-deductible, would relieve the government of part of the burden of subsidising pensions and disability benefits, which consume more than 20 per cent of the national budget each year. *Reuter, Warsaw*

Stalin fondly remembered

Mr Georgy Buzikashvili, a curator at the Joseph Stalin museum in Gori, Georgia, the former Soviet dictator's birthplace, sheds a tear on the 43rd anniversary of his death. More than 200 Georgians staged a rally to commemorate the anniversary of a man responsible for the murder of millions of Soviet citizens. "As long as Gori still exists, Stalin will live," said one octogenarian. "He was a great man, a kind man. He had no minuses." *Peter Graff, Tbilisi. Photo: AP.*

Russian arms exports soar

Russia exported $3bn worth of arms last year, an 80 per cent increase over the previous year, Mr Oleg Soskovets, first deputy prime minister, said yesterday. Mr Soskovets, speaking at a meeting of the government's council for co-operation in military technologies, said that revamping the country's military marketing systems was paying off.

He told the council that arms sales were a good source of hard currency for Russia. He said 75 per cent of the arms deals were in cash, from 51 countries. Officials have already said that Russia hopes to sell as much as $3.5bn worth of arms this year. *AP, Moscow*

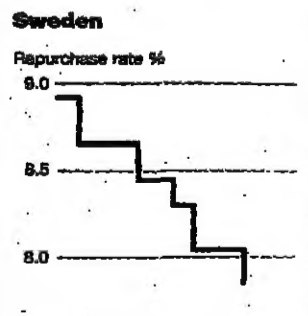
France to aid clothing industry

The French government yesterday announced a FFr2bn ($400m) a year aid plan for textile, clothing and shoe companies, hard hit by cheap imports especially from Italy. But the European Commission signalled its opposition in principle to such support, and warned that the plan would need its approval.

The plan would reduce employers' social security charges for lower-paid workers and increase the government contribution towards the cost of putting employees on part-time work. In return, companies would have to commit themselves to maintaining jobs and to hiring more young people. But the Commission said it preferred general job-creation schemes to sectoral ones. *David Buchan, Paris*

ECONOMIC WATCH

Key interest rate cut in Sweden



Sweden will qualify for European monetary union in 1997 despite slower economic growth this year, Mr Göran Persson, the finance minister, predicted yesterday. His forecast came as the central bank, the Riksbank, lowered its key interest rate for the fifth time this year. The cut lowers the bank's repurchase rate to 7.85 per cent from 8.05 per cent, a fall of 1.06 percentage points over two months. Mr Persson, who is set to take over as prime minister from Mr Ingvar Carlsson in two weeks' time, said the finance ministry would soon lower its forecast for growth this year from its most recent prediction of 2.7 per cent. Independent forecasts set the figure at less than 2 per cent. With inflation under control, the authorities are keen to stimulate growth to tackle high unemployment. Mr Persson said he expected further interest rate cuts. *Christopher Brown-Humes, Stockholm*

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Yeltsin addressing workers in Moscow yesterday. He told them 'unscrupulous' foreign imports were ruining local producers Reuter

Vote-hungry Yeltsin talks tough on tariffs

John Thornhill examines the import of the growing protectionist mood in Moscow

President Boris Yeltsin is nothing if not flexible. Yesterday he provided a classic example of a politician's ideological ambivalence when he promised to protect Russia's domestic manufacturers while claiming credit for the undoubted benefits his liberalising trade policies have produced.

Mr Yeltsin's decision to bang the protectionist trade drum appears part of a campaign to turn up the volume of nationalist rhetoric ahead of June's presidential election.

In an address to industrial workers in Moscow, an agitated Mr Yeltsin denounced a "fence of anti-dumping measures" blocking Russian textiles from the European market and conceded his government had allowed "unjustified freedom" to low-quality foreign imports.

"We cannot continue to put up with a situation where our own producers are ruined and foreign manufacturers, including unscrupulous ones, are encouraged," he said.

Mr Yeltsin's latest outburst confirms a growing protectionist mood in Moscow.

The agriculture ministry has threatened a permanent ban on US chicken imports, saying their poor quality endangers Russians' health. The claim has provoked outrage from US congressmen – and incredulity among Russian consumers, reared on mangy domestic birds.

Moreover, Mr Vladimir Panskov, finance minister, last week called for a 20 per cent average increase in import tariffs on a range of foreign goods, including cars and alcohol, to help rectify a budget shortfall.

That prompted a rebuke from European Union officials who warned that any such move could jeopardise a future free trade pact, and dash Russia's ambitions of joining the World Trade Organisation.

But, as the political heat in Moscow rises, it is becoming increasingly difficult to distinguish between pre-election tub-thumping, crude protectionism, and legitimate economic and public policy concerns.

Despite the worries in western capitals, it would be premature to suggest Russia intends to abandon the liberalised trade regime it embraced in 1992 following 70 years of economic autarky.

Yet Mr Yeltsin is doubtless mindful of the political juice that can be squeezed from attacking cheap foreign imports and protecting domestic producers.

The most visible consequence of Russia's trade liberalisation has been to encourage an influx of consumer goods rarely seen in Soviet times. A new generation of rich Russians now go shopping in their German cars to buy Dutch vegetables which they eat in front of their Japanese televisions.

Even the less well-off buy Swiss chocolate bars, Vietnamese T-shirts, and Turkish leather jackets from the thousands of informal traders who have colonised many street corners.

But many Russians already take the availability of these goods for granted and appear affronted by displays of conspicuous consumption.

A chorus of communists, nationalists, and Orthodox church leaders has been complaining about the deluge of western consumer product advertising – rarely in Cyrillic script – saying it makes them feel like foreigners in their own land.

Such sentiments have been exploited by some of Russia's industrialists to justify protectionism. Intense lobbying from domestic car producers, for example, led to the government imposing heavy tax increases on foreign cars, more than doubling the price of many imports.

But, as yet, there is little evidence that the biggest Russian manufacturer, Avtovaz, maker of the Lada car, has benefited from this breathing space. Rather, it appears simply to have pushed up its own prices, postponing the day of reckoning when it has to tackle its unwieldy cost base.

But in some areas of Russia's trade policy, there is undoubtedly scope for a more active government role. Even some enthusiastic free-market economists argue trade liberalisation has gone too far in some instances.

"If you take the case of alcohol then there is clearly a good argument for raising import tariffs," says Mr Anders Aslund, a former adviser to the Russian government who now works at the Carnegie Endowment for International Peace. "The influx of cheap vodka has messed up Russia's taxation system and punished their own producers, which makes no sense."

Perhaps the most startling point about Russia's trade, somewhat lost in the political clamour, is the extent to which liberalisation has already begun to transform large sectors of the Russian economy.

Many Russian manufacturers appear to be moving themselves towards the world market with astonishing speed. Last year, Russian exports to countries outside the Commonwealth of Independent States rose 25 per cent to $64.3bn – equivalent to $500 a head.

The bulk of these exports is still accounted for by unprocessed raw materials and oil and gas but some of the fastest-growing sectors are aircraft, plastics, electrical and mechanical machinery and furniture, suggesting some Russian manufacturers are successfully adapting to the new market conditions.

Despite the surge in imports, Russia has been running a comfortable trade surplus for the past few years and has been opening up new markets in the fast-growing countries of the far East.

The chief threat now is that the rapid real appreciation of the rouble against the US dollar since last summer will take the steam out of this export growth and lower the relative cost of imports, although even that would help Russian exporters retool.

Study points to market-driven solutions for loss-making national network

French railways report angers unions

By Andrew Jack in Paris

One of the unions behind last year's French train strikes yesterday attacked a government report on the future of the railway system for its "liberal vision of free competition, social sacrifices and deregulation".

The Communist-backed CGT, with many railway workers among its members, helped lead the demonstrations which paralysed the country last November and December. It accused the report of "forgetting the strike".

Its reaction – and that of the more moderate CFDT union, which raised questions about "uncertainties" in the document – suggests there will be fierce debate in the run-up to the signing of a new contract this summer between the SNCF railway company and the government.

The conclusions of a working party set up by the government and chaired by Mr Claude Martinand, head of economic and international affairs at the transport ministry, were published on Monday.

Summarised as "20 questions for debate", the findings will be at the centre of intense discussions over the coming months.

While offering no answers, they are clearly pointing towards more market-driven solutions in the future.

The subject is particularly topical because the state-controlled SNCF issued its 1995 results only at the end of last month. They showed a loss of FFr16.6bn ($3.3bn), more than twice the 1994 level, with turnover down 3.9 per cent and gross operating margins 20 per cent lower than in the previous year.

The SNCF was due to agree with the government last December a new contract setting out its objectives for the coming years. But ministers' attempts last November to remove the early retirement rights of train drivers as part of its social security reforms confused the debate, and the contract was postponed.

Ms Anne-Marie Couderc, junior minister for transport, stressed in a recent interview that the Martinand report would form the basis for discussions ahead of the new contract, in accordance with union demands and a decision by Mr Jean Mattéoli, the negotiator appointed to help resolve the strikes last year.

The report says the strength of the railways in the nineteenth century has declined in the face of the growth of car travel, the rise of individualism and the evolution of society.

It questions the relationship between the state, regional authorities and the SNCF, and asks whether there should be greater autonomy at the local level. It suggests it may be necessary to define a maximum grant – such as FFr1 per passenger-kilometre – for expenditure in the interests of regional development.

It discusses reforms to pricing, corporate organisation and performance indicators such as service quality, financial results and productivity. It also calls for consideration of ways ensure that current high levels of debt are avoided in future.

The report suggests that the French railway system is in better shape than many of its counterparts in other countries, but that in absolute terms it remains worrying. It points out that despite heavy investment usage is declining and operating deficits are increasing.

Domestic film industry attracts growing loyalty

By Andrew Jack in Paris

The French were more loyal to their own country's films in 1995 than during any year since 1990, according to figures released by the ministry of culture yesterday.

Nearly 46m cinema-goers last year out of a total of 130m went to see French films, giving its own productions 35.4 per cent of the market, compared with just 28.2 per cent in 1994.

That came against a backdrop of cinema attendances up 4.1 per cent, and cinema receipts up 5.1 per cent to FFr4.5bn ($880m), despite a modest rise in the average ticket price from FFr34.46 in 1994 to FFr34.77 last year.

Seven of the 15 most widely-viewed films during the year were French, while the share of US films dropped from 60.5 per cent to 54.2 per cent. The previous highest market share held by French films was 37.5 per cent in 1990.

The news will boost the country's film industry, which has long been frustrated by the dominance of US films, despite its small share of the US market.

Mr Philippe Douste-Blazy, minister of culture, said much of the success was due to comedies, including *Les Anges Gardiens*, *Gazon Maudit*, *Les Trois Frères* and *Le Bonheur est dans le Pré*.

He also highlighted the popularity of films such as *Le Hussard sur le Toit*, *Elisa* and *La Haine*, a portrayal of life in a troubled Parisian suburb which has received critical acclaim in France and elsewhere.

France provides financial incentives to help the national film-making industry, including redistribution of part of the income from cinema tickets and a requirement for television companies to fund and broadcast the country's own films.

It has been at the forefront of the battle to introduce quotas elsewhere in Europe, and has also helped to support the country's cinemas by restricting the days on which television stations can broadcast films, so they do not conflict with the days when new films are released.

Recognising that the French language limits its attraction in English-speaking and other foreign markets, it is discussing more widespread use of dubbing. Subtitled films only ever reach a minority audience.

The national figures hide considerable regional variations. While cinema-going has risen outside Paris, the nation's capital has witnessed a decline since 1990.

NEWS: WORLD TRADE

BA attacks US-German anti-trust move

By Michael Skapinker, Aerospace Correspondent

British Airways yesterday attacked the decision by Lufthansa of Germany and United Airlines of the US to apply for anti-trust immunity, saying it was contrary to the spirit of a more competitive airline industry.

Lufthansa and United have applied to the US authorities for immunity as part of the recently concluded "open skies" agreement between the US and Germany. US acceptance would allow the two airlines to co-ordinate their operations more closely.

Mr Robert Ayling, BA chief executive, said: "What Lufthansa wants to do is reduce the level of competition by relaxing the anti-trust laws." He said he would be interested to see how the US departments of justice and transportation dealt with Lufthansa and United's applicat ion.

While the Transportation Department had been closely involved in the open skies agreement, Mr Ayling said the Justice Department was required to promote competition. He said: "I don't think the result of this application is in any sense a certainty."

The US-German agreement follows open skies accords between the US and nine other European countries. The US has said it hoped the agreement with Germany would put pressure on the UK to give US carriers greater access to London's Heathrow airport.

Negotiations between the US and the UK broke down last year when the US rejected as inadequate a British proposal to allow some extra US flights to Heathrow.

Mr Ayling said, however, that the US-German pact would make no difference to the UK's position. He said: "We have never had the slightest difficulty competing with Lufthansa." He said the number of passengers flying from Germany to London and then to North America had increased by more than 10 per cent over the past year. BA expected additional growth this year.

He saw no reason to amend the existing US-UK aviation treaty. "From our point of view, there doesn't seem to be an immediate justification for raising the issue again. The United Kingdom is in a strong negotiating position with the US in that we are parties to a liberal bilateral agreement, or as liberal as it can be, given that Heathrow is a full airport."

The current treaty, known as Bermuda II, had resulted in strong competition in the UK-US market and the lowest fares in history. "You might say it is a model agreement," Mr Ayling said.

There was a limit to the number of flights that could be made to and from Heathrow. It was important that Heathrow remained "identified as part of the United Kingdom's national interest rather than that of the US or other countries."

See BA staff TV, UK News

Major steps up pitch for east Asia investment

By John Kampfner and John Burton in Seoul

Mr John Major, Britain's prime minister, yesterday stepped up his pitch for investment in the UK by the emerging economies of east Asia, and announced a series of agreements between British and South Korean companies totalling around $90m.

Concluding an Asian tour, Mr Major met President Kim Young Sam of South Korea and attended trade promotions.

In a speech to the Federation of Korean Industry, the UK prime minister said his country's low labour costs had enhanced its position as the favoured country for Asian investment in the European Union. The UK has now overtaken Germany, securing 40 per cent of Korean investment in Europe.

"The economic reforms which I have described have created an enterprise economy in the UK," Mr Major said.

The enterprise theme is central to the Conservatives' pre-election drive, emphasising the need for increasing competitiveness with the so-called "tiger economies" and pointing out what the UK government sees as restrictive practices by many EU neighbours.

Mr Major announced that three further South Korean companies had chosen to set up operations in the UK. Fine Electromechanics, Sung Kwang Electro Mechanics and Poong Jeon will supply parts to Samsung, the electronics giant which has pledged $2bn total investment in the UK. The new investment, which takes the number of South Korean companies in Britain to 19, will be worth £2.5m ($3.85m) and create 184 jobs.

Mr Major also took part in signing ceremonies for four deals between British and South Korean companies: British Nuclear Fuels will transfer to Hanjung the technology for making secure storage casks for spent nuclear fuel in a deal worth around $50m; GKN Automotive, a subsidiary of the GKN group, is to form a joint venture with Hanwha Machinery for the assembly and manufacture of constant velocity joints and drive shafts, in a deal worth £22m.

The other agreements included the supply of engineering and equipment for a plate mill by Davy McKee, part of Trafalgar House, for Dongkuk Steel, and snow-making equipment by a consortium of five UK companies for Daewoo for an indoor ski centre.

The UK could see considerably larger Korean investment in the near future, with LG Semicon and Hyundai Electronics both considering establishing semiconductor plants at more than $1bn each.

European increase of 8.3% last year with 'striking' rise in network markets

IT growth strongest for 5 years

By Paul Taylor

The European information and communications technology market grew by 8.3 per cent last year to Ecu304bn ($380bn), its strongest growth for five years, according to figures published today by the Frankfurt-based European Information Technology Observatory.

Core IT products and services such as office equipment and hardware maintenance and support contributed Ecu141bn to the total, with telecommunications equipment and services accounting for the remaining Ecu162bn.

"The most striking story of 1995 has been the growth in the network market. 1995 has been the year of the network," says the Observatory's report.

In particular the report notes that "the Internet has jumped the quantum leap that separates the era of traditional, simply personal usage of information technology, to a new era when everybody will use IT in connection with a network".

Europe's share of the worldwide information and communications technology market, at 32 per cent, remained similar to previous years, although the sustained strength of the US market continued to be a striking feature.

In Europe, improving corporate profit margins were being reflected in strong growth in investment in plant, machinery and IT.

Among individual countries there was no clear correlation between gross domestic product growth rates and the strength of the IT market. The report suggests acceptance of client/server computing and the development of the consumer market are more important factors.

For example Sweden and Germany both experienced below-average real GDP growth rates, but IT markets in both countries are showing exceptional expansion. In contrast, despite an exceptionally high 6.5 per cent real GDP growth rate, IT investment in Ireland remains "rather lacklustre".

Among individual markets the German IT market, which grew by 7.4 per cent last year and is expected to grow by 7.1 per cent this year, continues to be driven by PC sales.

Germany is the biggest IT market in Europe with a 28.4 per cent share of the total. The French market "started to come back to life in 1995", but growth at 5.4 per cent remained among the weakest in Europe.

The UK market "continued to support the total European market with a solid 8.9 per cent expansion", although growth was expected to moderate to 7.4 per cent this year. The real rise in the UK IT software and services sector could be attributed to outsourcing.

Overall, IT hardware revenues increased by 8.8 per cent last year, up from 5.4 per cent the previous year, while software sales, driven by packaged products, rose by 8.9 per cent.

Professional services also outperformed the overall IT market, growing by 8.3 per cent, while network services such as electronic data interchange and electronic mail grew by 15.7 per cent and were expected to remain among the fastest growing segments of the market.

The western European telecommunications equipment and services market grew by 8.7 per cent last year, and is forecast to grow by 9.8 per cent this year.

As with IT, the German telecoms market is the largest in Europe, accounting for 26.5 per cent of the total and growing by 9 per cent last year.

The UK market, one of the most liberalised in Europe, grew by 6.7 per cent last year. "With 112 Internet service providers connecting about 800,000 people, people in the UK are also very active users of the Internet," the report notes.

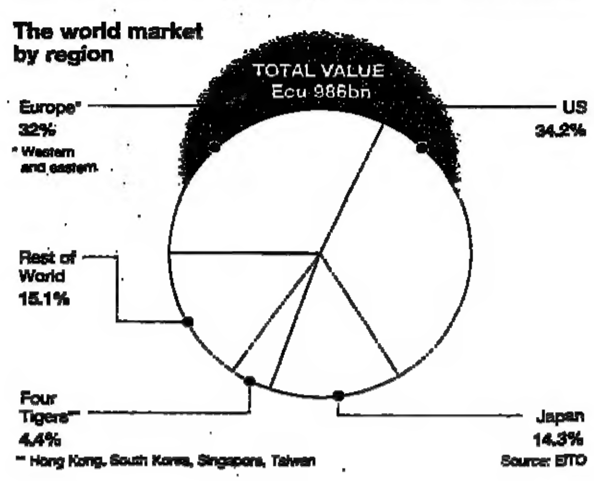
The market for telecom services in Europe totalled Ecu132bn last year and grew by 10.1 per cent, driven in particular by the rapid expansion of mobile telephony.

Observatory predicts that the total European information and communications technology market will grow to Ecu373bn by 1997, by which time the world market will be worth Ecu1,065bn.

● *EITO 1996, published by the European Information Technology Office, 069 6603-1530.*

See Information Technology Review, Section III.

Information and communications technology



WORLD TRADE NEWS DIGEST

Grand prix tyre challenge

Bridgestone of Japan, the world's second-largest tyre maker, is to challenge Goodyear's tyre supply monopoly in Formula One grand prix motor racing, in its strategy to capture world tyre market leadership. Bridgestone claims an 18 per cent share of the $60bn-a-year world tyre market. This is around 1 per cent less than Groupe Michelin, the world market leader. Bridgestone intends to lift its share to 20 per cent over the next several years.

Goodyear, demoted from world tyre market leadership at the end of the 1980s by Groupe Michelin and Bridgestone, and with an estimated 17 per cent share of the market, has been the sole supplier of grand prix teams for around a decade.

Bridgestone has become one of the most committed among tyre makers of using motor sport as a marketing tool. Last season it took Firestone, the US tyre maker acquired by Bridgestone in the 1980s, back into IndyCar racing – the US equivalent of grand prix – to restore the brand's image among Americans and Canadians.

Grand prix's attraction for Bridgestone is that races are beamed by TV to more than 100 countries, with claimed audiences of 100m-plus. These figures are matched only by the Olympic Games and soccer's World Cup: but the latter are held only once every four years compared with 16 times a year for grand prix. *John Griffiths, London*

UK support for Russia loans

The UK Export Credits Guarantee Department (ECGD) yesterday announced support for two further export credit loans for Russia. ECGD is providing repayment guarantees for the loans, worth $9m and £6m, to help finance contracts awarded to Kone Lifts and APV respectively.

The loans, arranged by Samuel Montagu on behalf of Midland Bank, are to Russia's Vnesheconombank – the Russian Bank for Foreign Economic Affairs.

Kone Lifts, owned by Kone of Finland, has been given responsibility by Moscow's Lomonosov State University to design, supply and supervise the commissioning of 52 replacement elevators at the university. APV will be installing and commissioning a production line in St Petersburg to produce dairy-based baby food. *Foreign Staff, London*

WTO sets dispute panels

The World Trade Organisation yesterday set up two independent dispute panels to hear complaints from Costa Rica against the US on textiles and from the Philippines against Brazil on desiccated coconut.

Costa Rica is challenging quotas imposed last year on its exports of underwear to the US. The WTO's textiles accord, which requires a 10-year phase-out of import curbs, allows new restrictions only if imports are causing or threatening "serious damage" to the domestic industry.

In the other dispute the Philippines argues that anti-subsidy duties of more than 120 per cent imposed by Brazil on its exports of desiccated coconut are not justified under fair trade rules. The WTO's dispute settlement body has set up 11 panels so far, out of the 29 complaints brought to the world trade watchdog since its creation last year. Four disputes have been officially withdrawn. *Frances Williams, Geneva*

■ Saudi Aramco is buying three 29-passenger Dash 8 turbo prop aircraft worth $30m from Bombardier, the Canadian aerospace and transit group, for delivery late this year. They are designed for short gravel and sand airstrips and to operate in high temperatures. *Robert Gibbens, Montreal*

NEWS: INTERNATIONAL

Hamas threatened by its own divisions

The military wing is acting against the goals of the political wing, writes **Julian Ozanne**

The spate of bombings in Israel by Islamist fanatics has brought to a head a crisis inside the extremist Hamas movement and sparked an international campaign to crush the organisation's external financial lifeline.

They have also revealed that, like the relationship between the Irish Republican Army and its political wing, Sinn Féin, the military wing of Hamas operates independently and often contrary to the immediate goals of the political wing.

The political leaders of Hamas, which opposes peace with Israel, were yesterday desperately seeking to impose their authority on the movement's underground military wings to safeguard the survival of Hamas as a political, religious and social organisation.

Dismayed senior Hamas political figures condemned the suicide bombings which claimed at least 57 lives in eight days and were considering issuing a fatwa, or religious edict, against further attacks. The unprecedented step marked the concern among the political leadership that they have lost control over the Izz el-Deen al-Qassam Brigades, Hamas' military wing.

The Gaza-based Qassam yesterday heeded the political leadership and announced a conditional ceasefire until July, halting all attacks if Israel agreed not to attack its activists.

But it was unclear whether more extremist factions based in the West Bank would obey the ceasefire, the third in the past 10 days. The last truce, declared by Qassam on Sunday was broken 24 hours later by extremist cells in the West Bank who carried out Monday's suicide bombing in the heart of commercial Tel Aviv.

Hamas was founded in 1987 by clergyman Sheikh Ahmed Yassin as an offshoot of the Moslem Brotherhood, a Pan Arab Islamist movement. It originally had the support of Israel as a counterweight to Mr Yassir Arafat's Palestine Liberation Organisation, but soon joined the *intifada*, or uprising against Israel, and became the most violent Palestinian faction.

In 1989 Sheikh Yassin was jailed for life by Israel for setting up Hamas and for responsibility for the kidnap and killing of two Israeli soldiers. After Sheikh Yassin's arrest, the movement separated the political and military wings and went underground.

Yesterday's effort by Hamas politicians to end the violence is a recognition of gathering international efforts, led by Israel and the US to strike against Hamas' activities abroad, particularly in Jordan, Syria and the US.

According to senior diplomats, US President Bill Clinton on Monday sent strongly-worded letters to Mr Arafat, Syrian President Hafez al-Assad and Jordan's King Hussein, urging them to close down Hamas's operations.

The US moves follow advice from senior Israeli intelligence officials that attacks have been ordered from outside, and the only way to defeat Hamas terrorism is to cut off its external finance worth up to $70m a year. "When we speak today of how to fight Hamas, first we must stop the money," a senior Israeli military official said last week.

Jordan is the most likely first step for a move against Hamas. Mr Ibrahim Ghoshe, a prominent Hamas leader, uses the headquarters of the kingdom's Islamist movement as a conduit for funds from abroad.

Moves against Hamas's external support could be devastating for the movement and the political leadership understands this. Recent Hamas documents confiscated by Israel warned about the danger to the movement from a discontinuation of largely private assistance from abroad.

Like many Islamist movements in the Arab world, much of Hamas's strength comes from an extensive network of Islamic schools, clinics, adult education centres and social welfare programmes for the poor which often deliver better services than the Palestinian Authority.

"Hamas is ready today to compromise on military attacks to preserve its civilian infrastructure," the Israeli military official said.

The confiscated Hamas documents argued for a shift in tactics in favour of political accommodation with Mr Arafat and the formation of a political party. Moderates in Hamas's political leadership began talks with Mr Arafat, and attacks against Israel were unofficially suspended for seven months.

But the extremists who largely control the military wing and dominate the external leadership vetoed Mr Arafat's demand that Hamas surrender its weapons and abandon the armed struggle; Hamas eventually boycotted the January Palestinian elections.

The failure of talks with Mr Arafat strengthened the hands of Hamas extremists. Israel's killing of Hamas master bomb-maker Yayha Ayyash ("The Engineer"), in January also sabotaged the ability of moderate political leaders to restrain extremists guerrillas.

Monday's Tel Aviv bombing was a warning that Hamas divided will be a much greater threat to peace and security than Hamas united.

Stopping traffic: An Israeli army reservist mans a roadblock between the West Bank and Jerusalem *Reuter*

African nations set to outlaw nuclear weapons

By Frances Williams in Geneva

Government leaders and ministers from all 53 African countries are set to sign a treaty outlawing nuclear weapons throughout the continent next month.

African diplomats said yesterday they hoped the accord, which was drafted with United Nations support, could serve as a model for an eventual nuclear weapons-free zone in the neighbouring Middle East.

"We want the treaty to encourage people in the Middle East to go this way. Then Africa can be truly sure of its security," said Mr Jacob Selebi, South Africa's ambassador to the UN in Geneva.

The African Nuclear-Weapon-Free Zone Treaty, also known as the treaty of Pelindaba, is the third regional pact barring nuclear weapons, following those covering Latin America and the South Pacific.

The Pelindaba accord commits countries to renounce the development, acquisition, testing or stationing of nuclear arms on their territory. It also prohibits the dumping of imported radioactive waste.

In addition, the five declared nuclear-weapons states – the US, Russia, France, Britain and China – have been asked to sign two treaty protocols guaranteeing not to attack treaty members with nuclear weapons or to carry out nuclear tests in the region.

They have not yet given a firm response to their invitations to next month's ceremony in Cairo, but Mr Selebi said yesterday he was "very confident" all five would sign. A third protocol commits France and Spain to observe the treaty for their own territories in Africa.

Mr Sola Ogunbanwo, a UN official who advised on the treaty, said the first moves towards denuclearisation of Africa in the early 1960s were sparked by French atomic tests in the Sahara desert.

Subsequent progress was blocked by South Africa's bid to become a nuclear power. However, its 1993 decision to destroy its six atomic warheads and join the Nuclear Non-Proliferation Treaty paved the way for the conclusion of the African pact in Pelindaba near Pretoria in 1995.

The treaty, which will come into force after ratifications by 28 African nations, allows members to decide for themselves whether to allow visits or transit by foreign ships and aircraft which may be carrying nuclear weapons.

Olympic committee sacks marketing group

By Norma Cohen

The International Olympic Committee has sacked ISL, its long-time marketing and promotions company. After this summer, the IOC will handle the multi-billion dollar sales of broadcast and sponsorship rights internally.

The move ends a 13-year relationship with a company which has engineered the IOC's transformation from a financially strapped organisation to a body with revenues equal to some multi-national corporations.

ISL, based in Lucerne, Switzerland, handles promotions and marketing for some of the world's leading sporting organisations including Fifa, football's governing body, and the International Amateur Athletics Federation. It was also responsible for the sale of sponsorship rights for this summer's European football championships in England.

Revenues raised by the IOC for this summer's Atlanta Games include more than $1bn from the sale of sponsorship rights and $1.4bn from the sale of broadcast rights. By comparison revenues from the 1980 Moscow Olympics were $150m to $160m from the sale of sponsorship and broadcast rights.

Mr Michael Payne, marketing director for the IOC in Lausanne, said that after the Atlanta Olympics this summer, ISL will not handle either sponsorship services – logistical support for sponsored promotions in connection the Olympics – or the IOC's co-ordination with the 200-odd National Olympic Committees.

He said the IOC had reviewed its relationship with ISL because both corporate stances and the individual national Olympic committees have become more sophisticated about the marketing potential of the Olympic brand name.

"We have worked with ISL for 12 or 13 years and it became apparent that on the client service side, the dialogue was increasingly between the sponsors and the IOC directly," Mr Payne said. "The sponsors wanted to have the big strategic discussions directly with the IOC," he explained.

The IOC will complete the sale of sponsorship rights for the 1998 Winter Olympics in Nagano, Japan and the 2000 Summer Olympics in Sydney, probably before the end of the summer, Mr Payne said. After that ISL will no longer have any involvement in IOC marketing and promotions except for specific projects. The IOC might continue to use ISL's research division.

Mr Payne said the IOC now had the sophistication to do much of the sale of sponsorship and broadcast rights itself. For instance, IOC members personally negotiated the sale of broadcast rights for the Olympics from 1998 through to 2008, an agreement which for the first time allows the organisation to share in advertising revenues.

An ISL official in Switzerland said the company's relationship with the IOC was being "redefined" at ISL's suggestion. "The programme has matured. What people didn't think could be done has been done," he said.

ISL was formed in 1983 by the late Mr Horst Dassler, one of the family owners of the Adidas sporting goods company. Dentsu, Japan's largest advertising company, held a 20 per cent stake until last year when the majority shareholders, the Dassler family, reduced that stake to 10 per cent.

Sydney games chief quits

By Nikki Tait in Sydney

Mr Gary Pemberton, the Australian businessman, yesterday announced he was quitting as chairman of the Sydney Organising Committee for the Olympic Games, due to be held in the city in 2000.

This prompted speculation that his departure reflected disagreement with the New South Wales Labor government or with the International Olympic Committee over who should have the European broadcasting rights for the games.

But Mr Pemberton, who also chairs Qantas, the recently privatised airline, said the decision was for personal and business reasons.

Mr Pemberton will be replaced by Mr John Iliffe, chairman of Woolworths, one of Australia's biggest retailers, and also of GIO Australia, the insurer.

Mr Pemberton's departure is the latest in a series of changes in the committee. After Sydney won the bid, the committee had difficulty finding a chief executive. A couple of head-hunted candidates fell away at the eleventh hour, and Mr Pemberton was obliged temporarily to do this job as well as chair the committee.

More recently, the IOC awarded the television rights to the European Broadcasting Union for US$350m (£233m), rejecting a US$500m offer from a consortium led by Mr Rupert Murdoch's News Corporation. It said the EBU had proved over time that it could provide "as much exposure as is possible".

Both Mr Pemberton and Mr Michael Knight, the state government's Olympics minister, said they were disappointed at the decision.

In a letter to committee directors, Mr Pemberton said he had disagreed with the IOC over what role he should play in the negotiations for TV rights. But he subsequently stressed disagreement over this issue would not have any wider impact on the relationship between the organisations.

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NEWS: THE AMERICAS

Cuba trade bill to spur legal action

By Afshin Molavi in Washington

Several big companies and thousands of Cuban-Americans are lining up to flood Miami courts with law suits as the US Congress prepares to send a tough anti-Cuba trade bill to President Bill Clinton, according to lawyers and officials who have been tracking the legislation. The Senate approved the bill yesterday.

The Cuba Liberty and Solidarity Act, expected to be signed by Mr Clinton next week, allows US citizens, particularly naturalised Cuban-Americans, to sue foreign companies operating or trading with Cuba if it can be proved that they have profited from expropriated land.

Cuban-American claims alone could reach a total of $94bn, according to Miss Wendy Sherman, a State Department official, while US courts could face nearly $2bn in administrative expenses, said Mr Robert Muse, a lawyer who has been following the bill. Some potential claimants hope to be compensated for land expropriated as far back as Fidel Castro's revolution in 1959.

A little-noticed provision of the bill also allows non-American companies or citizens to set up a US holding company in Miami with the sole purpose of filing law suits. If a company was deemed to be violating the law, which includes trading or investing in expropriated property, its executives could also be denied US visas.

"Miami lawyers are in for a boon," said Mr Lewis F. Desloge, a St Louis-based Cuban-American businessmen, who argued that a powerful group of wealthy Cuban-American exiles and big business influenced the US Congress to proceed with the legislation.

The progress of the bill accelerated in Congress last week after Cuban MiG fighters shot down two unarmed civilian aircraft flown by a Miami-based anti-communist group.

Mr Jesse Helms, Senate foreign relations committee chairman, has vigorously pushed the bill, leading to criticism that he has been heavily influenced by Cuban-American fund-raising groups and the Bermuda-based Bacardi Rum Company, which, they say, stands to gain from the legislation. Bacardi is a big campaign contributor to Mr Helms. Another company that could gain is Chiquita Brands International, which operated in Cuba as United Fruit.

The European Union attacked the legislation. "We condemn in the strongest possible terms specific provisions of the bill which run the risk of putting non-American companies investing in Cuba on the wrong side of American justice," an EU spokesman said.

Mr Art Eggleton, Canada's trade minister, said the bill would violate Nafta, which groups the US, Canada and Mexico.

Argentina senses hardening UK position

By David Pilling in Buenos Aires

Britain's decision to charge Argentine vessels a licence fee for fishing around South Georgia may reveal "a general hardening of attitude" towards Buenos Aires, officials at the Argentine foreign ministry said yesterday.

The ministry, which yesterday delivered a formal letter of protest to the British embassy, said Argentine-flagged ships had always fished unhindered around South Georgia, an uninhabited UK dependency in the South Atlantic.

The fact that an Argentine-registered ship had last week been charged a £70,000 ($107,000) fee showed that "apparently there has been a change of British policy [towards Argentina]," an official said. "We hope this does not mean a general hardening of attitude."

Argentina, which disputes UK sovereignty over South Georgia, will advise its ships not to pay for South Georgian fishing licences. However, officials stressed Buenos Aires was not seeking to provoke an incident, military or otherwise. The British Royal navy frigate HMS Northumberland is currently patrolling South Georgia alongside the Cordella, a Falklands fishing patrol vessel.

The British embassy in Buenos Aires denied it had hardened its stance. "There is no change of policy towards either the Falklands or South Georgia," it said. "The charging of licences is perfectly in accordance with the regulations of the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR). We are doing this in the interests of conservation."

South Georgian authorities, which operate from the disputed Falkland islands, have since 1993 issued licences to vessels of several nations, but never to Argentine-flagged ships. Some commentators suggest Britain has previously turned a blind eye to Argentine fishing around South Georgia, but has now decided to enforce regulations more strictly.

Fishing vessels go to South Georgia, 800 miles southeast of the Falklands, mainly to catch toothfish, which fetch high prices in Japan and Europe.

The 21-nation CCAMLR uses scientific research to determine an annual total allowable catch, this year of 4,000 tonnes. CCAMLR does not set licences, but leaves it up to individual states to control their own vessels. Last year, CCAMLR set an allowable catch of 2,800 tonnes, but estimates that more than 6,000 tonnes were actually caught.

● Argentina saw retail prices fall in February for the fifth time in the past 12 months, bringing 12-month inflation to just 0.3 per cent – a record low. February prices dropped 0.3 per cent.

Some economists are concerned that Argentina, once wracked by hyperinflation, is in danger of entering a deflationary spiral. The fact that prices fell in February appears to lend weight to those who say the economy will only climb gradually from last year's recession.

Brazil bank chief grilled over fraud

Cardoso: tackling problems

By Jonathan Wheatley in São Paulo

Mr Gustavo Loyola, the president of Brazil's central bank, endured tough questioning by congressmen yesterday over his failure to uncover an alleged multi-billion dollar fraud despite being aware of strong evidence of wrongdoing since last October.

Mr Loyola admitted that he first suspected the existence of fraud at Banco Nacional after a meeting with its controlling shareholders on October 5 last year. However, he denied recent press reports that the controllers had admitted committing any crime.

Banco Nacional, one of Brazil's biggest private-sector banks, was taken over by the central bank last November after running into insurmountable liquidity difficulties.

Mr Loyola said it was clear by October that the bank could not survive and would have to be sold.

The central bank took over Nacional's debts and sold its healthy assets to another big bank, Unibanco.

Mr Loyola appeared to have staved off calls for a full parliamentary commission of inquiry into the affair.

The government is keen to avoid such a probe as it would divert congress's attention from essential structural reforms.

It could also embarrass the central bank, whose ability to supervise the banking industry has been criticised by analysts and politicians. Congress earlier agreed to forgo a full inquiry in return for an explanation from Mr Loyola.

President Fernando Henrique Cardoso said yesterday his government was tackling the problems of the banking sector, previously masked by Brazil's high inflation, and "cleaning up the heritage of the past".

Nacional had been rumoured to be in deep trouble for months before its collapse. But a report published last week by Veja, Brazil's leading news magazine, went much further and accused the bank's controllers of fraudulently manipulating its accounts since 1986.

According to Veja, growing discrepancies between the bank's assets and liabilities were hidden by fictitious loans to over six hundred customers.

The central bank has been investigating the affair in private since last November, but was forced to comment publicly following the Veja report.

Shortly before taking control of Nacional, the central bank created a programme known as Proer to provide cheap financing for expenses in mergers and acquisitions in the banking industry.

Congressmen accused Mr Loyola yesterday of creating Proer for the sole reason of devoting public funds to saving Banco Nacional.

Mr Loyola argued that Proer was created to safeguard the interests of depositors rather than of banks or bankers.

However, he admitted that the entire $5.8bn lent under the system so far went to Banco Nacional.

Factory orders likely to boost US economy

By Michael Prowse in Washington

The US economy may rebound this spring, strong figures for factory orders indicated yesterday.

The Commerce Department said new orders for manufactured goods rose 0.5 per cent in January, reflecting strength in the technology sector. Officials also released revised figures for December, showing a gain of 1.7 per cent rather than 1.3 per cent as previously reported.

The figures were considerably stronger than expected in financial markets, where analysts had predicted a fall in orders of 0.3 per cent, reflecting the impact of severe winter storms.

Orders rose despite weakness in the volatile transport sector, which was pulled down by an erratic 11.8 per cent decline in aircraft orders. Excluding transport, orders rose 1.5 per cent in January. The strongest sector – industrial machinery and equipment – registered a gain of 5.7 per cent from December.

The economy was likely to "snap back" in the spring and grow at an annual rate of about 2 per cent, said Ms Diane Swonk, a senior economist at First National Bank of Chicago. However, the first quarter was likely to be even more depressed than the final period of last year, with annualised growth of less than 1 per cent.

Ms Swonk said the Federal Reserve was likely to cut interest rates again despite the prospect of a modest economic rebound because wage and price inflation remained subdued. Rates could be cut a quarter point later this month and by a further half point during the summer, she predicted.

The orders figures showed encouraging strength in capital goods. Excluding aircraft and defence industries, new orders for capital goods – a guide to civilian investment trends – rose 3.3 per cent in January, reversing falls in preceding months.

The harsh winter weather in January mainly affected shipments of orders, which fell 0.9 per cent following a 0.7 per cent gain in December.

Prospectuses in US 'unreadable'

Prospectuses issued by companies raising capital in the US should be simplified and made more intelligible, a Securities and Exchange Commission task force urged yesterday. The suggestions are part of a wider debate on SEC regulation of the US securities markets, writes Maggie Urry in New York.

The task force on disclosure simplification, set up last August, concluded that although the regulatory structure had served the market well for over 60 years, it "should be rethought in the age of novel financial instruments and virtually instantaneous electronic information and clearance".

Its report put forward 140 recommendations to remove unnecessary regulations, make disclosures more readable and to reduce the cost of raising capital in the US. These should cut the regulatory burden and the cost of compliance "without reducing the transparency and integrity of our capital markets," the task force said.

The task force found that prospectuses were often "turgid, opaque and unreadable." It suggested a new format for the opening pages of a prospectus which should "answer the more common questions asked by investors". The task force urged the SEC "to continue its plain-English initiatives" to make disclosures "concise and more readable".

It recommended the repeal or reform of 81 rules and 22 forms, which would eliminate or modify 25 per cent of the rules and 50 per cent of the forms that it had reviewed.

Other recommendations would make it easier for small companies to gain access to the capital markets. At present only large companies can use the shelf-registration system, under which companies register an offer of securities without setting a date so that they can issue them at short notice to take advantage of favourable market conditions.

The task force suggests extending shelf-registration to smaller companies with a 12-month record of filing public reports. This would allow a further 4,800 companies to make shelf registrations.

Under the proposals, tender offers involving an offer of securities would be put on a similar basis to cash tender offers. These offers, often made in takeovers, would mean if a company offers to buy another for shares rather than cash it would not have to wait while the new shares were being registered before starting the offer.

Missiles put Taiwan shipping under threat

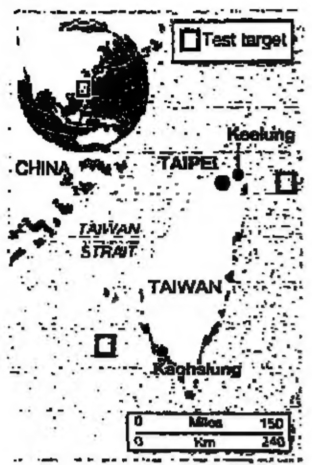
By Peter Montagnon and Laura Tyson in Taipei and Charles Batchelor in London

With the announcement yesterday of missile tests close to Taiwan's two largest ports, China is turning the heat on Taipei rather higher than had been expected before the March 23 presidential election. While China had already threatened to conduct tests, they had not been expected to put trade at risk.

Taiwan's stock market, which fell 1.3 per cent yesterday, has been vulnerable since tests started last summer. The central bank again pledged to support the currency at T$27.50 to the US dollar. About $10bn of capital flowed out of Taiwan last year, causing a tightness of domestic liquidity which aggravated the stock market's weakness.

After heavy intervention since last July, the central bank's reserves, which are among the largest in the world, have fallen from a peak of $100bn to just below $90bn. But the bank says it would still be comfortable if they fell as low as $45bn-$50bn.

The government said last night it had already taken action to protect fishermen and



ensure normal sea and air transport. The closure of an air corridor used for 30 flights a day between Taipei and Japan, Australia and the US will add perhaps 10 minutes to flying times. Traders say the most visible effect of the tests could be on shipping.

Military activity in the Taiwan Strait would seriously disrupt shipping and could have a knock-on effect on the two large container terminals at either end of Taiwan, shipping experts warned.

About 70 per cent of Taiwan's trade passes through the affected ports of Kaohsiung and Keelung, and other ports are too small to take the strain. This could seriously disrupt trade in March, but exporters' larger fear is that their order books will dwindle as customers fret about Taiwan's future ability to meet delivery dates.

The strait is on the direct route for tankers, dry-bulk carriers and container vessels sailing from Singapore and Hong Kong to Shanghai, South Korea and the Japanese ports. "All the biggest shipping lines use the Taiwan Strait," said Mr Keny Chou, London representative of the Yang Ming Line, a Taiwanese container group. "It would have a big impact on shipping in the strait."

Many cargoes destined for Chinese ports are transshipped from ocean-going vessels in Hong Kong and then moved up the Chinese coast through the Taiwan Strait. "It is a very busy route," said Mr Chris Horrocks, secretary general of the International Chamber of Shipping in London.

Shipping in the strait already has to take account of strong currents and shallow waters. Navigation can be difficult in the typhoon season with little room to manoeuvre a large ship. Tankers use the strait to reach offshore mooring buoys at the northern tip of Taiwan and container ships serving Kaohsiung to the south and Keelung to the north of the island also pass through it.

Kaohsiung is the world's third largest container port after Hong Kong and Singapore, handling 4.6m containers in 1993, according to Containerisation International Yearbook rankings. Keelung ranked 13th at 1.8m containers.

Camouflaged troops on Taiwan's Quemoy island yesterday Reuter

China grows more suspicious of Lee

China suspects President Lee Teng-hui, who is of native Taiwanese extraction and is widely expected to win this month's presidential election, of shifting towards independence from China rather than eventual reunification, write Laura Tyson and Peter Montagnon.

It has subjected him to vehement public criticism since he made a private visit to the US last year. Some analysts believe the aim of the missile tests announced yesterday may be to frighten voters into according Mr Lee a victory but with less than 50 per cent of the poll. That would reduce his mandate for promoting independence.

To a limited degree, the tactic worked in last December's general elections. These saw a surprisingly strong showing for the conservative New party which wants to foster close links with China. The ruling Kuomintang nationalist party scraped home with only just over half the seats in the Legislative Yuan.

Others argue that Mr Lee is the only Taiwanese politician with whom China could eventually clinch a deal on reunification. While it clearly wants to discredit him, there is a growing view in Taipei that Beijing has also become aware of the need for quick progress on unification.

The chance of bringing Taiwan back into the fold may ebb as democracy becomes more entrenched and once Hong Kong reverts to mainland rule next year.

China has said it will not rest until it has brought about reunification, and may keep up its pressure even after the elections.

China was enraged by the US decision last year to grant Mr Lee a visa to attend a reunion at Cornell university. Beijing recalled its ambassador from Washington, froze most official contacts and embarked on a campaign of intimidation against Taiwan.

Yesterday's announcement by Beijing has heightened unease on the island long accustomed to living under a siege mentality. There are concerns that with the tests taking place so near to its shores, there could be some sort of miscalculation. As one Taipei-based foreign investment banker joked: "I'd feel much safer if they were aiming at us instead of near us."

Beijing to try to end budget deficits

By Tony Walker in Beijing

China will seek to eliminate its budget deficit by 2000, but faces big challenges in boosting revenues and controlling expenditures, Mr Liu Zhongli, finance minister, told the opening session of China's parliament yesterday.

Mr Liu forecast a budget deficit for 1996 of Yn61.4bn ($7.4bn) or about 8 per cent down on last year's budgeted figure. But he said the "deficit is still rather large and debt too heavy".

He blamed tax evasion and fraud, unpaid taxes by struggling state enterprises and excessive spending on wasteful capital works projects for China's continuing budgetary difficulties.

China, he said, "must tighten the collection and management of taxes, oppose all forms of extravagance and waste, and strive to reduce the deficit by taking measures to expand sources of revenue and reduce expenditures."

Mr Liu warned a "huge amount of debt" was due to be repaid this year. Debt service obligations would total Yn133.1bn, up Yn46.2bn on 1995. Foreign loans plus the budget deficit would take total obligations in 1996 to Yn195.2bn, to be financed by the issue of treasury bonds.

China's revenues for 1996 are forecast at Yn687.2bn, an increase of 11.1 per cent compared with 1995. Expenditures are expected to reach Yn748.6bn, up 9.9 per cent on the 1995 figure.

Mr Liu said China's plans to slash tariffs to an average 23 per cent from 35.9 per cent from April would "increase the difficulty of balancing the budget."

China would increase defence spending this year by 11.3 per cent to Yn70.2bn, but this represented a smaller increase than last year, when the defence budget grew by 14.5 per cent. Budgeted defence spending accounts for perhaps less than half actual expenditures on the military. The services generate their own revenues from commercial activities. They also receive "off-budget" funds.

ASIA-PACIFIC NEWS DIGEST

Thais struggle to slow economy

Thai economic performance in January provided mixed results for the government's plan to slow the economy and impose some discipline on the growing problem of too much short-term capital inflows. For the sixth consecutive month, the growth in private investment slowed, registering a 14.1 per cent increase year-on-year in January against 14.3 per cent in December and 14.7 per cent in November.

Import growth also slowed significantly, increasing 16.3 per cent in January against 27.9 per cent in December. Export growth remained steady at 23 per cent, leading to a trade deficit of Bt37bn ($1.47bn), still a big contributor to the country's current account deficit.

In December, that deficit was Bt31.7bn, slightly below previous months, but analysts said a significant long-term downward trend is still not apparent. Growth in manufacturing increased for the fourth consecutive month, coming in at 9.8 per cent. But the main worry continues to be inflation, an annual 7.4 per cent in January. The central bank argued the increase was mainly due to rising food prices and therefore was cyclical. This has been the main explanation for rising inflation for the past 13 months. *Ted Bardacke, Bangkok*

Election called in Victoria

Voters in the Australian state of Victoria will go back to the polls on March 30, this time for state elections. Mr Jeff Kennett, head of the Liberal-National coalition state government, yesterday called a snap poll just three days after the conservative coalition won a sweeping victory in Australia's federal election.

Mr Kennett denied he was out to capitalise on the federal win, saying if he did not call an early election, months of destructive speculation would ensue.

The Kennett government, elected in October 1992, has pursued the most aggressive privatisation programme of any of coalition-controlled states. It has taken an axe to government spending, contracting out services and cutting jobs, but has actively promoted the state, adding tourism attractions such as this week's Grand Prix and wooing foreign investors.

Saturday's result showed a swing against Labor in Victoria, less marked than in Queensland or New South Wales. It would take a contrary swing of well over 7 per cent to dislodge the Kennett government. *Nikki Tait, Sydney*

Singapore to censor Internet

Singapore's Internet access providers will have to block out sexually-oriented and politically sensitive material, the Singapore Broadcasting Authority said yesterday.

Most Internet activity would not be affected by the new rules, but the authority said it would regulate World Wide Web pages, and access to those based in foreign countries, that might undermine public morals, political stability or religious harmony. Pages run by Singapore political parties would have to be licensed by the government.

In Singapore, which has about 100,000 Internet users among its 3m population, the government has embraced the Internet, using it to issue press releases and official statistics.

"But we must also try to keep in check abuses in cyberspace such as pornography, hate literature sowing social and religious discords, and criminal activities," the authority said.

The government has already put some sites off-limits by ordering the country's three Internet access providers not to connect to news groups whose titles include "alt.sex". SingNet, an access service run by Singapore Telecom, the country's phone company, said it could keep out unwanted foreign material by blocking access to sites identified by the government. *AP, Singapore*

Mad Hatter enters Japan's loan fray

The government is becoming desperate to persuade the public, writes Gerard Baker

The final stages of the Japanese government's attempts to get its plan for a bailout of the country's housing loan companies through parliament look increasingly as though they might have come from the pages of Lewis Carroll's *Alice* books.

In chaotic scenes at the parliament building in the past two days, members of the main opposition have so far successfully blocked passage of the budget that would permit the proposed public spending.

Their tactic has been to stage a kind of Mad Hatter's tea party outside the committee chamber, assailing government ministers who attempted to persuade them to get on with the debate.

Then, in a similar spirit of surrealism, in the early hours of Tuesday morning, the increasingly desperate governing coalition parties came up with a novel plan designed to break the deadlock.

The new proposal purports to make concessions to official opposition and public hostility by increasing the costs of the bailout to the country's banks.

On closer examination, if it is to succeed, it clearly requires the Japanese public to believe, like Alice's Queen, several impossible things before breakfast. This latest twist is an attempt to assuage the almost unprecedented popular anger at the planned use of public money in the liquidation of the housing loan companies, which are on the point of collapse under a pile of non-performing loans.

The focus of the new scheme is an apparent increase in the burdens to be borne by the main creditors of the housing lenders, the country's banks and agricultural co-operatives.

The original plan, which was drawn up three months ago, called on the banks that founded the housing loan companies, or *jusen*, to write off all their Y3,500bn ($33bn) in loans.

Non-founder banks would write off Y1,700bn, while the agricultural co-operatives, the biggest category of creditor, got off lightly with just Y530bn. The remaining Y680bn would be met by public funds.

These funds are expected to cover the first-stage Y6,400bn in known losses at the *jusen*. Further losses, expected to reach at least Y1,200bn, would then be covered over a 15-year period, split half and half between banks and public funds.

The new proposal changes none of these basic elements, despite public pressure on the government to back down. Instead, its main component is that over a seven-year period, the banks will pay additional taxes of Y500bn. The agricultural co-operatives will pay an extra Y180bn.

The combined sum is almost precisely equivalent to the government's planned contribution to the scheme. That appears to leave the banks and the farming institutions in effect paying back the controversial Y680bn the government has agreed to pay.

But the new scheme, in fact, represents nothing of the sort. The banks, it is claimed, will pay the extra tax by means of higher profits. They have pledged to restructure their operations to improve their profitability by Y1,500bn over the next seven years. That will result in higher corporation tax payments of Y500bn into the government's coffers.

Agricultural co-ops will have to find savings of at least Y500bn to produce higher tax payments of Y180bn. In short, the money is to come from unspecified targeted savings made by financial institutions.

There are several reasons why the scheme is unlikely to pass the credibility test with voters. The banks are in process of restructuring their operations anyway, under pressure from their own heavy burden of non-performing loans.

Any improvements would in any case have gone partly to the government in the form of higher taxes.

But more important, there is no guarantee in the proposal that banks and agricultural co-operatives will in fact achieve improvements that will produce extra revenue for the government. The outlook for Japanese banks' profits in the next few years is still bleak.

The flimsiness of the pledge was underlined yesterday by Mr Toru Hashimoto, chairman of the Federation of Bankers' Associations and president of Fuji Bank, one of the largest banks. He told a news conference that while banks were committed to trying to make savings over the next seven years, they could not possibly promise unequivocally to pay the Y500bn in higher taxes.

Opposition politicians were contemptuous of what they saw as an attempt to hoodwink the electorate into backing the scheme.

"These changes amount to nothing more than an attempt to deceive the people," Mr Takashi Yonezawa, secretary-general of the New Frontier party, the main opposition party, claimed.

Even finance ministry officials appeared nonplussed. The official view was that the ministry welcomed any moves that might improve the health of the banking system, as a benefit for the economy as a whole. But in private, ministry officials were scathing.

"The coalition parties obviously feel it is a sensible political move, but from a financial point of view it is complete nonsense," one said.

The government, in short, remains trapped between two forces. On the one hand, the public, as evidenced in opinion polls and local election results in the past few weeks, is growing ever more furious about the use of taxpayers' money to bail out what they see, at the least, as inefficient financial institutions.

But on the other, the banks that founded the *jusen* will not budge from their determination not to accept any more of the cost of liquidating them.

The government is adamant that its latest scheme marks a genuine attempt to bridge the gap. But its increasingly desperate attempts to appease the public suggest it may be following a dictum of another of Alice's friends: "When I use a word," said Humpty Dumpty, "it means just what I choose it to mean."

Patten in plea to China on HK residence rights

By John Ridding in Hong Kong

Mr Chris Patten, Governor of Hong Kong, yesterday challenged China to respond to Britain's announcement of visa-free access for Hong Kong residents by making a guarantee on the right of abode for the territory's inhabitants.

"The British government has made a sensible and helpful decision on visa-free access," said Mr Patten, referring to Monday's announcement by Mr John Major, UK prime minister, to waive visa requirements for Hong Kong residents after next year's handover to China.

"Now it is for the Chinese leaders to make as rapidly as possible an equally positive decision on the right of abode in Hong Kong after 1997."

The conditions that China attaches to the right of abode, which will also determine whether Hong Kong residents overseas will have to re-register as residents of the territory, remains a sensitive subject ahead of the handover.

"It is a serious confidence issue," a Hong Kong government official said. "Not just for the local community but also for the overseas Chinese diaspora."

During a meeting in January with Mr Malcolm Rifkind, UK foreign secretary, Mr Xian Xichen, his Chinese counterpart, indicated Hong Kong residents would not need to re-register. The issue has become a subject of contention among Chinese officials and a final decision has yet to be taken.

China welcomed Mr Major's stance on visa-free access, regarded as necessary to support free travel and the colony's position as a trade and financial centre.

But pro-China politicians in Hong Kong and the pro-Chinese press have criticised Mr Major's assertion Britain would mobilise the international community should Beijing breach the terms of the 1984 Sino-British Joint Declaration on Hong Kong.

"For Major to say such a thing at this time at this place is extremely unwise and could put improving Sino-British relations under a cloud," the Ta Kung Pao newspaper said in an editorial.

"If Britain schemes to mobilise the international community to interfere in China's affairs it will run into a stone wall." The paper often provides a platform for official Beijing views.

Mr Major's announcements, made during a visit to Hong Kong, marked an attempt to reassure the colony ahead of the handover. He warned China against dissolving the Legislative Council and against tampering with human rights legislation.

Tougher law urged on 'corporate killing'

By Robert Rice, Legal Correspondent

Companies would face big fines for management failures which resulted in death under a change in the manslaughter laws recommended yesterday by Britain's Law Commission.

The government's law reform body called for a new offence of "corporate killing" comparable to killing by gross carelessness, to replace the present law on corporate manslaughter. But it backed away from recommending jail sentences for directors of companies convicted of the proposed offence.

The new law would apply equally to non-UK companies operating in England and Wales and would extend to UK territorial waters, British ships and aircraft and offshore platforms.

The commission said the difficulties of holding companies responsible had been underlined by the failure of a 1991 case against P&O European Ferries following the deaths of 187 people in the 1987 Zeebrugge ferry disaster.

It said defects in the law had allowed companies to escape prosecution following the 1987 fire at King's Cross Underground station in which 31 died; the 1988 Piper Alpha oil platform disaster in which there were 167 fatalities; and the 1988 Clapham rail crash in south London in which 35 people died.

The main reason was that, under the present law, prosecutions for "corporate manslaughter" could be brought only where one person could be identified as a "controlling mind" of the company. As a result there have only been four prosecutions for corporate manslaughter under English law and only one conviction, in the 1993 Lyme Bay canoeing disaster case in south-west England in which four people died. The case, involving a one-man company, presented no problem in identifying a controlling mind who was responsible. The owner of an activity centre was jailed for three years but last month had his sentence reduced by a year by the Appeal Court.

Under the suggested law a company would be liable to prosecution if a management failure resulted in death and that failure constituted conduct far below what could reasonably be expected of the company.

Companies convicted of corporate killing would face an unlimited fine and could be ordered to remedy the cause of the death.

Fines would be set by the courts according to the circumstances of the case. Mr Stephen Silber, a law commissioner, said the fines imposed by courts under existing environmental laws might provide a benchmark. In 1990 Shell was fined £1m for polluting the River Mersey in north-west England.

The Confederation of British Industry, the country's biggest employers' lobby, welcomed the clarification of the law but expressed concern that many of the proposals were similar to existing health and safety legislation.

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Artworks disappear in line of duty

By Antony Thornycroft in London

The Ministry of Defence has "lost" 161 of its inventory of 900 works of art. The situation has become so serious that the Government Art Collection has stopped lending works of art to the ministry.

Some pictures have gone missing because mobile military personnel tend to take their office decorations with them when they move – including paintings from the officers' mess.

There is no indication of systematic theft, according to an investigation by the National Audit Office – just "natural wastage". The value of the works gone missing is low, not much over £100,000, but some are of great historical interest and are irreplaceable.

The MoD is perhaps the richest and largest of all government ministries thanks to gifts from retired military figures, and commemorative works of battles and personalities commissioned for officers' messes.

Many of the works of art were lost during the upheavals that have affected the ministry in recent years. An 18th century painting, *An Officer of the 28th Foot*, valued at £8,000, ($12,300) disappeared when the Quartermaster General's office moved from London in 1992, while eight of a total of 10 prints transferred from England to Germany in the late 1970s also went missing en route.

The run-down in the armed forces has caused its own problems. In 1937 the Territorial Centre in Acton was presented with a painting of Richmond Hill by Cropsey. When the Unit was disbanded four former officers offered the painting for sale at Bonhams, the auction house, which valued it at £400,000. At the last moment the Territorial Army laid claim to the painting but was forced to pay Bonhams £80,000 as compensation for loss of sale.

The National Audit Office has recommended that the MoD improve its inventory records and its security.

Visitors wash hands of oily beaches

By Roland Adburgham in Cardiff

Since the Sea Empress tanker ran aground off St Ann's Head near Milford Haven in Wales on February 15, spilling 72,600 tonnes of cargo, the fear has been not only of the damage to wildlife but of the impact on the local economy, especially fishing and tourism.

The region is one of the UK's leading tourist destinations, with the county of Dyfed accounting for a quarter of all visitor nights in Wales. Pembrokeshire – the western part of Dyfed and including Milford Haven – has Britain's only coastal national park. Annually, it attracts an estimated 6m "visitor days" and an expenditure of more than £70m ($107m).

Even before the spillage contaminated the south Pembrokeshire coastline, the economy was under pressure. The unemployment rate in Haverfordwest was 13.8 per cent in January, and in south Pembrokeshire 18.4 per cent. While the numbers of jobless are not great – a total of 5,000 in these two areas – that reflects the low rural population.

Mr Roger Davies, the director of West Wales Task Force, says employment in agriculture has declined, has almost disappeared in deep-sea fishing and has stagnated in tourism. The task force is a public sector partnership set up to counter the problems caused by the rundown of the region's military bases. Mr Davies calculates that in the past four years 1,000 direct and indirect jobs have gone from military bases in the area.

About £20m a year has been lost from the local economy. Other jobs have also disappeared, notably with the closure of Dairy Crest's creamery at Whitland in 1994.

The task force claims to have helped create about 750 jobs in small and medium-size enterprises. But inward investment has been hard to achieve, although Pembrokeshire qualifies as an assisted area for government grants. Enterprise zone status for Milford Haven ended in 1994 and an application for new zones was recently rejected.

The tanker disaster, says Mr Nick Ainger, opposition Labour MP for Pembroke, "couldn't have come at a worse time because this is when people are taking decisions about where to book their holidays. It will take a relatively short time to get back the natural beauty, but very difficult to get back those who book elsewhere."

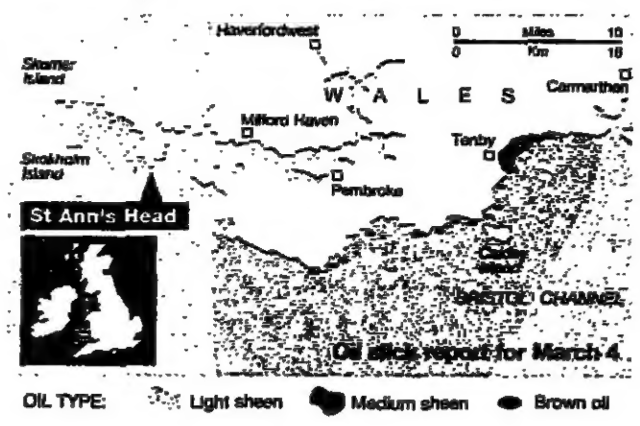
While fishermen, suffering from a statutory ban on catches, can immediately prove lost income, it will take much longer for hoteliers, holiday cottage owners, caravan parks, restaurants and shops to demonstrate consequential loss. "I'm extremely concerned about what will be the size and speed of payments," Mr Ainger said. The government has announced a £2m bridging fund for hardship cases. "It's a gesture, but I've a feeling it will be insufficient," he said.

Wales Tourist Board is seeking to reassure holidaymakers that the south Pembrokeshire beaches will be clear of oil before the summer (although there is less certainty about the quality of bathing water).

"We are greatly heartened by the clean-up," a spokesman said. "Some of the beaches were horrific a week ago, and are now 95 per cent clear."

Another consequence of the spillage is to heighten concern about National Power's plans to convert a power station at Pembroke to import and burn orimulsion, the so-called "dirty fuel". The proposal exemplifies the dilemma of environment versus economy: without the conversion, jobs will be lost; with it, they will be created.

Few argue that refining itself should cease at Milford Haven, where Texaco, Gulf and Elf directly and indirectly employ about 2,000 people.



Jaguar's new baby banks on tradition

By Haig Simonian in Geneva

Jaguar, the luxury carmaker owned by Ford, yesterday made a strong bid to be the star of this year's Geneva Motor Show with its new XK8 sports car, unveiled at the event yesterday.

Dubbed "the spiritual successor to the E-type" by Mr Nick Scheele, Jaguar's chairman, the XK8 is shorter but roomier than the XJS model it replaces.

Mr Scheele said the sleek new sports car, which will go on sale in October, continued a sporting tradition at Jaguar stretching back through the E-type to the legendary pre-war SS100.

The company expects to sell about 12,000 XK8s in the first year of production. That would be more than one-fifth higher than the peak annual sales of the E-type and well ahead of the best year's sales of the 21-year-old XJS.

The XK8 should help to raise Jaguar's output to almost 43,000 cars this year from 39,000 in 1995. That would be the highest figure recorded since Ford paid £1.56bn for the company in 1989.

Mr Scheele said that one-third of output could be made up of the XK8. Jaguar has capacity to build up to 17,000 XK8s a year, but does not expect the new model to lead to any increase in its workforce above the 6,600 employed at present.

Powered by a new 4 litre V8 engine – the company's first V8 – the XK8 should offer "outstanding" performance akin to the now-discontinued V12-powered XJS, but with much lower fuel consumption.

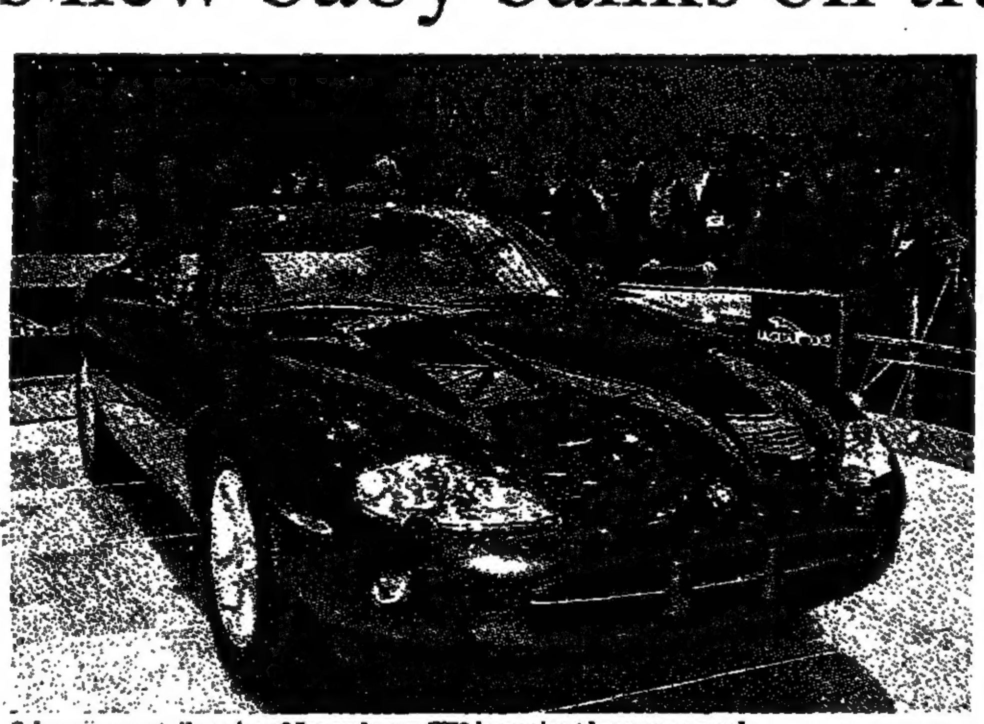
Prices for the new model, which will be available as a convertible and a coupé, have not been announced, but are expected to be around the top end of the range for the XJS.

Mr Scheele said the XK8 would compete directly with the Mercedes-Benz SL range, but would be more competitive on price and offer equivalent – if not better – performance, room and noise levels.

The bulk of sales are expected to be in the US.

Jaguar has made much of the links between the XK8 and the E-type, with a strong echo of the earlier car's distinctive styling, notably its oval air intake.

Appropriately, the original E-type was first shown to the public in the grounds of a estaurant in Geneva by Sir William Lyons, the company's founder, exactly 35 years ago.



Saleroom secret: the price of Jaguar's new XK8 has not yet been announced Picture: Beatrix Stampfli

Profit-sharing plan for gas market collapses

By Robert Corzine in London

An attempt to introduce consumer profit-sharing into the domestic gas industry has foundered, with British Gas and industry regulator Ofgas at loggerheads over how such a mechanism should work.

Possible profit-sharing arrangements have been included in discussions under way between the company and the regulator on a new price control formula for TransCo, the pipeline monopoly which accounts for the bulk of British Gas' revenues. But the two sides have adopted opposing approaches to the issue, and company executives say they are pessimistic about reaching an agreement.

British Gas is holding out for a symmetrical system under which consumers could face price cuts or rises depending on how well TransCo performs from year to year.

But Ofgas officials said they were looking at a system "in which there is only upside for the consumer". Ms Clare Spottiswoode, the director-general of Ofgas, and her staff, are concerned that 19m gas consumers, who have been promised lower gas prices as a result of the planned introduction of full competition in 1998, could see their bills rise in order to cover revenue shortfalls that TransCo might experience in a bad year.

"We recognise the problems of putting the price up to consumers," said an Ofgas official.

But British Gas executives reject the Ofgas approach. "It is difficult to see the incentive if there is only upside for the consumer," said one senior executive, adding that he "would be surprised if there was agreement" on a profit sharing mechanism.

Ofgas officials, however, said British Gas's approach on the issue was not consistent. They reported conflicting views between TransCo's management and executive directors at the group level. That was denied by a senior executive, who said: "There is no wedge between the PLC and TransCo" on profit sharing or any other issue in the price control formula.

The notion of profit sharing in utilities has been put forward by Labour as a way to ensure that consumers benefit from any "excessive" gains made by regulated utilities. Mr John Battle, the Labour party's chief energy spokesman, yesterday said that the party was still studying the issue. "But a Labour government would want to see a fairer distribution of benefits and profits built into the regulatory system," he said.

British Gas executives said they have looked at a sliding scale system, under which both consumers and shareholders would have to share the effect equally from 5-10 per cent increases and decreases on a given profit measure.

BA to launch internal TV service

By Michael Skapinker, Aerospace Correspondent

British Airways plans to become the first company in the world to make daily television broadcasts to its staff. The broadcasts will include senior managers being "doorstepped" and interviews with staff involved in industrial disputes.

Mr Robert Ayling, chief executive, said yesterday that the 15-minute daily BA news broadcasts could begin in April. They will cost BA £2m-£3m ($3.1m-$4.6m) a year, and will go to all 53,000 staff worldwide.

Mr Ayling said BA reporters would require managers to account for their decisions. "It will expose those managers who are not performing; we probably have too many managers," he said.

The broadcasts, Mr Ayling said, would give company news directly to all employees, an improvement on "the terrible rumour mill we have at the moment".

Mr Ayling, who succeeded Sir Colin Marshall as chief executive this year, dislikes systems of company communications which require each level of the corporate hierarchy to transmit information to more junior levels. "I want us to be a modern company, a young company," Mr Ayling said. "I want to get rid of hierarchies and deference to seniority."

He said the broadcasts would help to provide employees with better information during industrial disputes, such as that last year when staff at Heathrow Airport objected to the employment of students.

He said BA was thinking of arranging for the broadcasts to be submitted to hotels which hosted crews, as well as to places of work. Staff staying in hotels would have to enter a code to see the broadcasts, but Mr Ayling added: "If 53,000 people are going to be seeing it, you have to assume it will be seen by people not in the organisation."

Mr Ayling said BA's improved first and business class cabins had helped it win back Japanese passengers it had lost to Virgin Atlantic, Japan Airlines and All Nippon Airways. He said Japanese customers had gone to competing airlines because they did not think the BA product was good enough.

Meanwhile, BA said yesterday that its passenger traffic increased by 13.4 per cent in February compared with the same month last year.

Ulster loyalists warn on violence

By James Harding and John Murray Brown

Leaders of Northern Ireland's loyalist fringe parties yesterday signalled their commitment to uphold the ceasefire until the start of all-party negotiations, but warned of the "serious difficulties" in preventing a return to violence. The leaders of the Ulster Democratic party and the Progressive Unionist party, which represent the paramilitary groups, did not rule out a return to "full-scale conflict".

However, they argued that the paramilitaries deserved credit for their "incredible restraint" in the face of the resumption of IRA terrorist violence.

The two parties also signalled a rift with the Ulster Unionists, the largest unionist party, over the format of elections in Northern Ireland.

The European Investment Bank is to provide a £24m ($36.7m) interest rate subsidy to small and medium sized enterprises as part of the European Union's £266m peace and reconciliation package for Northern Ireland. The EIB has designated 13 UK and Irish banks to dispense the package, which was formally launched yesterday in Belfast by Ms Monika Wulf-Mathies, the EU commissioner for regional affairs.

Baroness Denton, the Northern Ireland economy minister in the British government, said the subsidy, if fully taken up, will promote £240m worth of capital investment in the small business sector. The EIB, the European Union's development bank, has been involved a number of job creation schemes in Northern Ireland but this is the first time the bank has offered subsidy credit terms.

The commission has so far approved projects worth £5.5m, but £45m has been earmarked for non government bodies, and a further £37m for newly created partnerships between Northern Ireland's 26 local councils, and community and business groups.

In the first sign of a thaw in relations between Dublin and the Ulster Unionists, Mr John Bruton, the Irish prime minister said Dublin would "reply positively" to an invitation received from Mr David Trimble, the Ulster Unionist party leader.

Amid signs of deepening distrust between Dublin and Sinn Fein Mr Bruton also confirmed that the government intended to hold a further meeting with the IRA's political wing "at the earliest opportunity."

As the second day of intensive consultations got underway in Belfast, Mr Bruton also came under attack in the Irish parliament over reports that he had pressed Mr John Hume, leader of Northern Ireland's moderate nationalist Social Democratic and Labour party, Hume to support the British government in the vote on the Scott report last week.

Mr Bruton declined to confirm or deny the reports. However Irish opposition politicians yesterday pressed the prime minister, anxious to exploit any differences between Mr Bruton and his coalition partner Mr Dick Spring, leader of the Irish Labour party, which would look askance at any suggestion the coalition had planned to rescue a British Tory government.

UK NEWS DIGEST

Tourist industry hits record year

A weak pound and the Northern Ireland ceasefire helped the British tourist industry notch up a record year in 1995, with visitor spending up by about 18 per cent, figures will reveal today.

Mrs Virginia Bottomley, the heritage secretary, will hail the figures as evidence that tourism is now more important than North Sea oil and the financial services industry to the UK economy.

But many in the tourist industry remain concerned that Brtain is failing to increase its market share of world tourism, and they believe more government spending on overseas promotion is vital.

Figures from the Central Statistical Office will show that visitor spending in the UK in 1995 was about £11.8bn ($18.2bn), up from £10bn in 1994.

The annual figures will also show an increase of some 12 per cent in the number of visitors to Britain – the largest jump in recent years. The total number of visitors in 1995 is expected be about 23.5m, up from 21m. *George Parker, Westminster*

Beleaguered shipyard wins order

Swan Hunter, the Tyneside shipbuilder saved in June after two years in receivership, will today announce its first substantial order, which will provide work for 1,300 people.

The company, owned by Dutch businessman Mr Jaap Kroese, has won a multi-million pound contract to convert a 330m-long, 90,000-tonne bulk carrier, Solitaire, into the world's biggest pipelaying vessel.

The contract, awarded by Dutch-based Allseas, is a breakthrough for Swan Hunter's new management, which bought the company's main Wallsend yard and its name for about £4m just days before an auction of its machinery would have made its demise inevitable.

Swans' confirmation of the order, signed on Friday after months of negotiation, coincided with news yesterday from VSEL, based in Barrow-in-Furness, Cumbria, that it has won its first merchant shipbuilding order for more than 20 years.

In a £14.75m deal that will save 60 jobs which were to have been shed next month, VSEL will build two tankers for shipowners James Fisher and Sons. The order was won against competition from the Far East, Turkey, the Netherlands and the US. *Chris Tighe, Newcastle upon Tyne*

Weather service funding shift

Britain's Meteorological Office is to gain extra commercial freedom by moving to "trading fund" status from April 1, the government announced last night.

The effect will be to remove the Met Office further from the financial and managerial control of its parent department, the Ministry of Defence. Instead of receiving most of its funds directly from the MoD through the parliamentary vote, the Met Office will meet all running costs by selling forecasts to the MoD and other customers in the public and private sectors.

As a business it will have revenues of about £150m a year. Its asset base is just over £100m (of more than half represents the UK share of international weather satellites).

About 15 government agencies are already operating as trading funds, from the Royal Mint to the Defence Evaluation and Research Agency. *Clive Cookson, Science Editor*

Nadir video link blocked

An attempt to allow Mr Asil Nadir, the former Polly Peck chairman, to give evidence by live video link from northern Cyprus in the Old Bailey trial of Mrs Elizabeth Forsyth, his personal assistant, was blocked yesterday by Mr Justice Tucker, the trial judge. He said the law only allowed video links to be used in cases where perjury proceedings could later be brought against witnesses if necessary. This was not possible with Mr Nadir in northern Cyprus.

Mrs Forsyth denies two charges claiming she handled £395,000 allegedly stolen from Polly Peck by Mr Nadir. Mr Nadir has remained in northern Cyprus since leaving Britain in May 1993. *John Mason*

Oil exploration set to rise

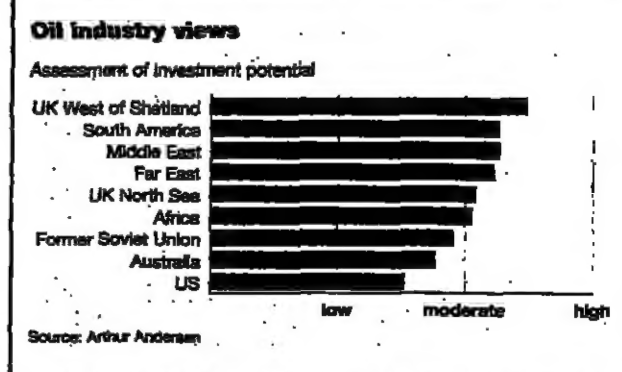
A survey of senior oil industry executives shows that capital spending on exploration activities in the UK is expected to rise this year even if oil prices remain relatively soft.

The survey, carried out by Arthur Andersen, the accountants and consultants, showed 57 per cent of respondents plan to increase exploration spending. It was less clear whether there would be a rise in North Sea development expenditure, however, with respondents divided equally between an increase and a decrease.

Respondents were particularly optimistic about prospects in the UK's newest oil province west of the Shetland Islands. The area ranked above Latin America and the Middle East in terms of its overall attractiveness for investment. Most respondents thought there was still significant oil reserves to be found in UK waters.

But a majority thought the number of jobs in the industry will continue to decline for the remainder of the decade.

A majority of respondents also thought there would be an increase in mergers and acquisitions in the UK's oil and gas sector this year. They also believe that the consolidation of the sector will accelerate in coming years. *Robert Corzine, London*



'Sootprint' clue to pollution

Detecting specific sources of harmful small particles may be about to get easier, writes **Victoria Griffith**

Potential sources of pollution at Logan Airport in Boston, Massachusetts are easy to spot. In peak hours, the exhaust from buses and cars hangs heavily in the air. When aeroplanes take off, they leave behind a black streak, and in the distance, industrial chimneys emit grey smoke.

Yet whenever the state transportation authority, Massport, tries to discover exactly where the pollution is coming from, local businesses engage in old-fashioned finger-pointing. "Everyone blames everyone else for the problem," says Norman Faramelli, a director at Massport. "And there is no way to prove who is responsible."

A new technology developed just across the Charles River at the Massachusetts Institute of Technology (MIT), however, may soon make Faramelli's job a little easier. Three professors at the university – Adel Sarofim, William Peters and John Vander Sande – have come up with a way to trace small-particle pollution to its source.

By imaging particles with electron microscopes and conducting a complex analysis, say the professors, they can identify not only the generic origin of soot – such as car exhaust or factory pollution – but the specific source as well.

According to the MIT professors, every pollution source carries a unique "signature" – a "sootprint", as they have dubbed it.

"To start with, we can say if the particle comes from a diesel engine," says Vander Sande. "Then we identify other particles like the kind of lubricating oil used, which fuel it was operated on, and so forth. With a thorough analysis, we can even identify other conditions such as the time of day it was operated or if an aeroplane was taking off or landing."

After 10 years of research, Vander Sande and his colleagues say, they will be ready to conduct some large-scale testing later this year. If everything goes according to plan, many businesses may be held fully accountable for their pollution for the first time.

One of the professors' first customers may be the government of Massachusetts. "This could be a valuable tool for us," says Sonia Hamel, director of air quality for the state. "We may request some testing in the autumn. If I were a company putting out a lot of pollution, this technology would make me nervous."

Identifying pollution sources is vital for tackling air quality problems around the world. Yet until now, it has been a very inexact science. In Mexico City, for instance, the murky haze that envelopes the city has been blamed on everything from steel plants and buses to residents using gas burners at home.

"In an ideal world, pollution would be controlled uniformly at the source," says Vander Sande. "But in reality, pollution is often targeted for control only once it is known to produce an undesirable effect. But if people are dying of cancer in a certain area, for instance, there has been no way to prove it is because they live down wind of a factory 15 miles away."

Mobile sources of pollution such as cars and aircraft present another challenge. Cars represent millions of tiny smokestacks: yet because they are so small and numerous, they are extremely difficult to control. The new MIT technology would help environmentalists assess the exact impact of such mobile sources.

But it will not resolve all pollution analysis questions. For one thing, it identifies only soot – technically defined as small particles. Public focus is still mainly on gas pollution – elements such as ozone and carbon monoxide.

Yet soot has been gaining attention as a particularly harmful form of pollution. A recent series of studies at Harvard University's School of Public Health, for instance, link small-particle pollution to severe health problems and early death.

Vander Sande knows first hand the health problems soot can cause. His analysis began 10 years ago in the hills of Pennsylvania, when he was asked to study small particles

It will take a long time for MIT technology to make any large impact on air quality control

in the lungs of miners.

The medical community was baffled by some miners' ability to survive decades in the mines without contracting black lung disease while others succumbed after just a few years. The answer, according to Vander Sande, was that the disease was caused not by the coal dust as was widely believed, but by the small particles released when the coal was extracted.

As some areas contained more harmful particles than others, the specific mines worked in were more important than the number of years spent underground.

Because of health studies like that one, environmentalists are paying increasing attention to small-particle pollution. Yet even as the focus shifts to soot, it will take a long time and a lot of investment for the MIT technology to make any large impact on air quality control.

"We first need to take samples of pollution at a specific factory to be able to say that soot comes from that factory," says Vander Sande. "Without a basis for comparison, the technology would be meaningless." And Vander Sande admits his operation is still so small that just one or two large-scale studies would keep his equipment tied up for nearly a year.

Despite the problems of implementation, the MIT sootprint system is an important breakthrough for pollution control. For the first time, environmental managers could irrefutably link pollution to sources, even if they are many miles away. "Anything that helps us identify where the pollution is coming from is extremely useful," says Hamel. "This technology may help us do that."

Viewpoint · By Derek Osborn

Action plan for everyone

Brussels is preparing new proposals following a period of both progress and deterioration

The European Union is gearing up for a new round of negotiations on its environment strategy for the rest of the decade. The European Commission recently published proposals for updating its last environment action plan, adopted in 1992, and Ritt Bjerregard, the environment commissioner, presented them to the Environment Council for a first preliminary discussion on Monday.

One of the important background documents to the revised plan is a report which the Commission asked the European Environment Agency to produce last year. The agency's job is to monitor the state of the environment throughout Europe and trends in it. Last autumn's report shows a mixed picture – good progress on some issues but deterioration on others. Overall, we are still some way from achieving a sustainable pattern of development in Europe.

The reduction and elimination of CFC (chlorofluorocarbon) production to protect the ozone layer is one of the great success stories of the environment in recent years, and shows what can be achieved by scientists, policy makers and industry working together to solve a problem.

It is encouraging to see how the environmental necessity of eliminating CFCs is becoming the mother of all kinds of new CFC-free inventions, such as the hydrocarbon refrigerators launched last month by Elstar of the UK.

But the report shows that in other areas we are not yet doing so well. Carbon emissions may possibly be stabilised by Europe as a whole by 2000 as planned. But we are clearly only at the beginning of the efforts that will be required in Europe and throughout the world to deal with the climate change problem.

The energy *supply* sector has done the most so far to achieve greater carbon and energy efficiency. More will be needed in the next stage from greater efficiency in the *consumption* of energy, above all in the transport sector. Everyone is looking for innovation from industry here – and for new proposals from the Commission for targets and measures to promote greater carbon efficiency in vehicles.

Emissions of sulphur dioxide and the problem of acid rain have been much improved in the past few years as coal use has declined and techniques have been introduced to clean up emissions from power plants and other large combustion plants. Further progress over the next few years is clearly now in the pipeline.

The quality of air in our streets has, however, been deteriorating because of the growth of road traffic and increasing emissions of nitrogen oxides and other pollutants; and although catalytic converters will bring some reduction of emissions from new vehicles, the growth of the number of vehicles is expected to cancel out much of the benefits.

We shall need more new technology here, and another round of tightening of standards to deal with these NOx emissions and the growing concern about poor air quality and its possible health effects. Again, the Commission's next set of proposals, following lengthy co-operative studies with the oil and motor industries, are eagerly awaited.

Meanwhile, strategies are beginning to be put in place to minimise or cut the production of waste throughout Europe, to promote recycling and to improve methods of final disposal of unrecoverable waste.

There is still far too much waste being produced, and not yet enough recycling. Also, too much waste is being disposed of to unsatisfactory landfill or in old and outworn incineration plants. Major investment will be needed in waste reduction, recycling systems, recovery of energy from waste and improved landfill management over the next few years.

Water quality is gradually improving in most parts of Europe, with the massive investment programme following through from the Urban Waste Water Directive and other European water legislation. But there is more to be done to clean up ground water and other waters affected by diffuse sources of pollution, particularly those arising from agricultural practices. Further reforms of the Common Agricultural Policy could have a major influence here in encouraging less intensive forms of agriculture with lighter use of pesticides and fertilisers. There may need to be new efforts to deal with some of the damaging effects of persistent organic compounds.

The Commission's new action plan is a bold and wide-ranging document which gives a strong lead on the way forward on all these issues.

It proposes more use of economic instruments to encourage good environmental practice; a new pattern of voluntary agreements with industries to achieve environmental improvements; further measures to promote more sustainable agriculture; and more environmentally-friendly transport; and measures to strengthen the implementation and enforcement of environmental legislation.

There is sure to be intensive debate on the plan during 1996 both in the Environment Council and in the European Parliament, before it is agreed by the new Maastricht process of co-decision.

But the significance of the debate goes way beyond the environment professionals in Brussels and capitals. The plan and its implementation needs to involve those responsible for transport, agriculture, energy and industry policies at European and national level just as much as environment policy specialists.

It also needs to involve industry and business, local government and non-governmental organisations just as much as national governments. The environment action plan is a plan for everyone's environment – and everyone needs to be involved. The agency will provide the facts to fuel the debate.

Derek Osborn is chairman of the European Environment Agency.

NOTICE TO THE HOLDERS OF BEARER BONDS OF Yorkshire Water plc ("Yorkshire Water")

5th March, 1996

The offer referred to below is not being made in the United States of America

Offer by James Capel & Co. Limited ("James Capel"), part of HSBC Investment Banking, and Cazenove & Co. ("Cazenove") to purchase the 6¾ per cent Senior Convertible Bonds due 2008 of Yorkshire Water ("the Bonds").

James Capel and Cazenove hereby offer from 8.00 a.m. on 5th March 1996 to purchase all or any of the Bearer Bonds on the following terms (the "Offer").

The Offer Terms

Bearer Bonds will be purchased together with all unmatured coupons appertaining thereto at a price of 112 per cent for normal settlement applicable to Bearer Bonds.

James Capel and Cazenove reserve the right to close the Offer at any time without notice and in any event the Offer will not be extended beyond 4.00 p.m. on 18th March, 1996.

The Bonds were issued on 23rd June, 1993. James Capel has an option to sell to Yorkshire Water, and Yorkshire Water has an option to purchase from James Capel, all Bonds acquired by James Capel or Cazenove pursuant to the Offer. All Bonds acquired by Yorkshire Water pursuant to exercise of such an option will be subsequently cancelled.

Contacts: James Capel & Co. Limited,
Sales: Huw Leyshon, Director of Convertibles, (Tel UK +44 171 336 4279); Christopher Lee, Head of Convertible Sales. (Tel UK +44 171 336 4275);

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Prices for electricity determined for the purposes of the electricity pooling and settlement arrangements in England and Wales.

½ hour period ending	Provisional Price for Trading on 05.03.96: Pool purchase price £/MWh	Final Prices for Trading on 07.02.96: Pool purchase price £/MWh	Pool selling price £/MWh
0030	12.08	24.00	24.35
0100	12.43	24.08	24.38
0130	12.43	35.98	36.25
0200	12.43	35.98	36.25
0230	12.43	35.98	36.25
0300	12.43	36.98	36.25
0330	12.43	36.97	38.25
0400	12.68	25.18	25.45
0430	9.68	25.18	25.45
0500	9.68	25.18	25.45
0530	10.34	24.83	25.11
0600	9.70	24.83	25.11
0630	9.70	24.84	25.12
0700	12.86	25.53	26.04
0730	14.07	28.52	29.33
0800	14.09	34.08	35.23
0830	14.25	34.95	38.32
0900	14.63	35.61	36.93
0930	15.18	35.44	36.81
1000	15.96	34.93	36.18
1030	15.94	34.03	35.12
1100	15.30	30.18	31.27
1130	15.37	35.61	36.91
1200	15.98	39.52	40.98
1230	15.85	39.18	40.53
1300	14.95	38.05	39.92
1330	12.89	37.83	38.94
1400	12.78	37.59	38.66
1430	12.75	29.45	30.30
1500	12.76	29.02	29.88
1530	12.79	29.94	30.90
1600	12.97	39.97	41.19
1630	15.05	73.58	89.75
1700	18.17	198.67	228.01
1730	20.00	305.70	343.56
1800	22.85	334.82	370.24
1830	38.58	221.98	247.31
1900	51.80	118.92	131.70
1930	48.94	67.78	73.41
2000	31.42	40.45	42.71
2030	15.19	28.65	29.40
2100	14.28	26.81	27.22
2130	17.77	26.34	26.65
2200	17.76	25.99	25.28
2230	14.08	24.51	24.79
2300	14.08	24.51	24.79
2330	14.08	24.51	24.79
2400	14.08	9.13	9.13

Prices are determined for every half-hour in each twenty-four hour period. Prices are in pounds per megawatt-hour, rounded to two decimal places. To convert prices to pence per kilowatt-hour the decimal point should be moved one place to the left, eg £18.88/MWh becomes 1.888p/kWh. Provision for the determination of pool prices is made in the Pooling and Settlement Agreements which govern the operation of the electricity pool in England and Wales. The Pool Purchase Price is the basis of the majority of payments made to generators in respect of electricity traded through the pool. The calculation of pool prices is a highly complex process the product of which is subject to revision or correction (and sometimes major alterations) until final pool prices are determined approximately twenty-four days after the day of trading. Accordingly, due to the possibility of such revision and/or correction, no reliance should be placed upon provisional pool prices for any day being the same as final pool prices for that day. Final pool prices are also capable of revision. Pool Selling Price is the price paid by purchasers of electricity under the pool trading arrangements. It is dependent upon the determination of Pool Purchase Price. Further information on pool prices is provided on behalf of the Pool by Energy Settlements and Information Services Limited. Anyone wishing to receive such information should telephone 0115 945 5789 between 8.30am and 5.15pm Monday to Friday.

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ARTS

Television/**Christopher Dunkley**

Candid questions and comedy

There is a nice irony in *Band Of Gold*, the ITV drama which has been stretched into a second series following the surprise ratings success of the first. The narrative revolves around a band of prostitutes. But thanks to the hysteria of some Britons over sex, ITV dare not actually show the women providing the common or garden services with which they earn their living, so instead we get the weird and wonderful.

Thus we see Carol putting on stockings and suspenders and strutting around while Curly hauls on his rubber gloves; and new girl Colette engrossed in conversation with Anita while casually continuing with the flagellation of a punter as he kneels in skirt and ear rings to clean out her kitchen cupboards. Heaven forbid we should get a glimpse of sexual intercourse – that might corrupt us! The first series, about a murder, was pretty bleak and gritty. Episode 1 in the new series suggested that we may be in for something more soapy and banal as the women's cleaning company takes off and the supergirls outwit the beastly men.

★

Under the title *The Long Johns*, Channel 4 is running 10-minute versions of the two-handers created by John Bird and John Fortune for *Rory Bremner, Who Else*. These semi-improvised confrontations between a mild mannered interviewer and some ghastly authority figure (two-faced politician, grasping head of a privatised utility, and so on) have added tremendously to the Bremner series. So unedited versions seemed a marvellous idea. But in fact they bear out the old rule that the more tightly you edit, the better comedy usually becomes. To see the under-edited versions, complete with corpsing and hesitations, actually reduces the pleasure.

★

If there are any greybeards left in the comedy department of the Birtian BBC, perhaps one of them could bring this rule to the attention of Dawn French and Jennifer Saunders. From their earliest work together on screen they have tended towards the self indulgent, but there have been moments in the new series of *French And Saunders*, which finished on Thursday, that have been the worst.

It seems odd that performers of such obvious intelligence should have a blind spot when it comes to knowing when a joke has been worked to death and beyond. The worst example concerns the two provincial ladies, one of whom repeats everything the other has said, five seconds after she has said it, and while she is still talking. It was not funny the first time they did it, and to see it come up again suggests to the viewer that these performers are now beyond editorial control. Still, their Sloanes trying to run an art gallery and getting 12 separate sounds into every vowel are priceless. And Dawn French's lying schoolgirl – "So you went to that rave?"/"Yeah, wore my Oasis tee-shirt and took E all the way through"/"Funny I thought I saw you that evening in your gym slip with your dad in the high street" – has me flailing for breath on the old green sofa.

★

When ambulance-chasing series such as *Blues And Twos* first appeared on UK television they were condemned here as cynical attempts to exploit misfortune for the sake of ratings: "See the old lady trapped under the lorry!" Experience has shown, however, that not every programme in this category is contemptible. BBC1's two recent *999 International Rescue* specials have been enthralling and inspiring. True, each did spring from people's misfortune, but it was their good fortune in which these programmes were interested.

First came the woman whose life was saved by an operation during a long-haul flight, carried out by a professor of surgery, a medical student, and an air stewardess, using a wire coat hanger, a pair of scissors (to go through the chest wall, for crying out loud) and brandy for sterilisation. Then, amongst other stories last week, was that of the Chinese lorry driver whose vehicle fell hundreds of feet down the side of a remote wooded valley, leaving him trapped in his cab under a tree trunk, only to be rescued by a whole team of western doctors and engineers who happened to be the next people to pass along the road and who recorded brief bits of their rescue on camcorder. It makes a change from all the hatred and death on the news.

★

You see few genuinely new ideas on television these days: anything claiming to be new tends to be either a modification or a combination of old ideas. *The Mark Thomas Comedy Product* on Channel 4 comes as close as possible to being really new, though even this reminds you of *Candid Camera* and the Beadle dreadfulness. The difference is that Mark Thomas's stunts come with attitude. He is a funny and fast-fire stand-up comedian, but the guts of these programmes are the filmed sketches.

Two weeks ago he went in a rabbit outfit to the offices of Live TV, the Daily Mirror cable TV company where they have News Bunny, claiming to be a stand-in sent by an agency. Last week he drove a tank around London trying to get government help in exporting it to Iraq, calling on the DTI and even William Waldegrave's home.

He also interviewed a PR woman from McDonald's who explained how the hamburger experience should be fun. Then he tested to breaking point the sense of fun of those running a drive-in McDonald's, ordering 50 burgers which he promptly tried to re-sell at cut price outside their front door, taking cows through the drive-in, and arriving with a jazz band on a low-loader. The trouble is that even if you begin by feeling he has chosen legitimate targets, you usually end up sympathising with the small fry who invariably have to deal with him.

★

You could argue that Ruby Wax was using the technique before Thomas, but her targets are usually individuals rather than companies, government bodies, or ideas. The similarity lies in the way that Wax likes to form a conspiracy with the viewers against the target, whether it is Imelda Marcos or Pamela Anderson. The trouble is that, as with Thomas, the goading and sly asides to camera can eventually set you against the interviewer and drive you into a sort of sympathy, however unwilling, with the victim. But in the last episode of *Ruby Wax Meets*... the subject was Burt Reynolds who gave as good as he got, waiting till Rube was preoccupied and then leaning into camera to comment in a stage whisper on this pushy broad, and making sure, when she dived behind him to put on a Burt Reynolds tee-shirt, that we all got a good look at the hefty Wax frame. No doubt our heroine was in on all of this, but the sense of equals fencing was more enjoyable than that of a clever-clogs scoring points off a dimwit.

Concert

Vienna Concentus Musicus

A visit to London by the Vienna Concentus Musicus is always an event to look forward too, especially given that its guiding force, Nikolaus Harnoncourt, is more likely to be found conducting international symphony orchestras such as the Concertgebouw and the Chamber Orchestra of Europe these days and picking up numerous recording awards. So its visit to the Barbican Hall on Monday to kick off its International Chamber Orchestras series (which over the next three months promises concerts from the English Chamber Orchestra and Pinchas Zukerman, Moscow Soloists and Yuri Bashmet, and Stockholm Chamber Orchestra and Esa-Pekka Salonen) was especially welcome, not least because it offered that increasing rarity, an all-Haydn programme.

The Concentus Musicus is the oldest of the big-name period-instrument bands, founded over 40 years ago. Alice Harnoncourt continues to grace the front desk of the first violins and there is still something earnest and proselytising about its playing. Current fashions among period performance specialists may permit a degree of tonal flexibility and warmth, tainted perhaps by later 19th-century habits, but, for all its efforts to keep up to date, ghostly flickers of the hair-shirt austerity and maddening mannerisms found in the Concentus Musicus's early Bach cantata recordings, for instance, still remain.

Its account of Haydn's Symphony No.52 in C minor, the quintessential *Sturm und Drang* work, was superficially impressive and often thrilling: bows bit into strings, rhythms were spat out, and valveless horns whooped with irrepressible if perilous delight. But as an interpretation it was curiously bloodless, relying on broad effects of contrast to make its points, pompous rather than purposeful. Much detail was lost in a congested mass of sound which the dutiful application of all of Haydn's repeats did little to clarify. The arrival of Barbara Bonney to sing two Haydn opera arias from *Il mondo della luna* and *L'infedelta delusa* promised to shed a welcome beam of sunlight, but even she seemed disorientated at first, as po-faced in manner as the players.

It was not until the second half of the concert that matters took an upward turn. During the *Scena di Berenice* a genuine sense of dialogue ensued, and Bonney and the orchestra often produced music making of a quite special and melting beauty. After this, a rumbustious account of the Symphony No.31 in D did much to save the day, with appropriately rustic playing from the four horns in the first movement, some eloquent solos from leader and principal cellist in the second, a well-pointed minuet and a nicely delineated variation finale. Not the most searching or joyous Haydn performance by any means (who, after all, can compare with Beecham?), but a distinct improvement.

Antony Bye

Theatre/**Sarah Hemming**

Contraband in Cornwall

Let's get a few things straight first. There is no monarch in Nick Darke's new play *The King of Prussia*, neither does it venture anywhere near Germanic territory. The Prussia of the title is Prussia Cove in Cornwall and the self-styled "king" of it is John Carter, the charismatic leader of an 18th-century smuggling ring.

Darke's play, which is brought to the Donmar Warehouse's "Four Corners" season by Cornwall's Kneehigh Theatre, follows the exploits of Carter and his fellow "free traders" but is far from being just a hearty romp, a romantic nostalgia trip or a dry history play. Rather it seethes with life, wit and ideas.

The Carters are running a successful enterprise. George III is on the throne, revolutions are in the air and nervousness makes duties heavy. So free trade is brisk and Carter and his brothers provide a vital service with their contraband gin and brandy.

But while Carter may break the law of the land, he prides himself on never breaking the laws of nature. "I am an honest man," he protests, constantly, and his code is strict and rigorous: he never marks his goods up more than his customers can afford.

It is only when a wealthy couple from Bath, the Stackhouses, move into the area and the bored Mrs Stackhouse, ignored by her botanist husband, starts playing the smuggling game to her own rules, that things turn sour.

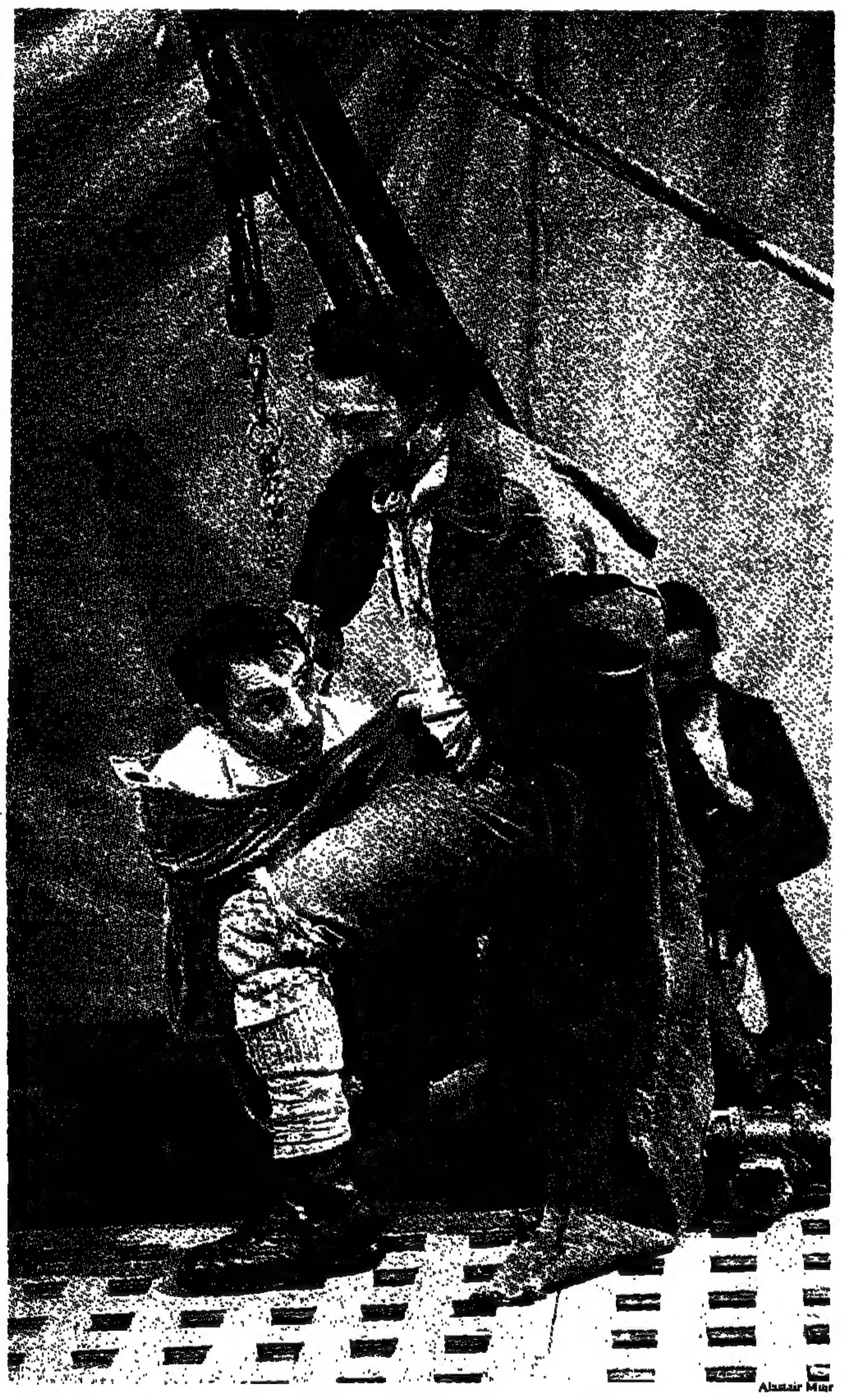
This is a meaty play, with some wonderful running gags and tricks of staging. But like Cornwall's coves, it has many unexpected depths. The piece acts as a critique of capitalism, it also raises questions about the points where justice, conscience and the law part company.

These themes are woven into an enjoyable script that throbs with a sense of place. You feel the presence of the sea constantly. You also feel that these are people living on the edge, in every sense. They are closer to the continent than to the rest of England – they all know where Brest is, but they have never heard of Bath. And the idea that life depends on wit and energy is reflected in the staging: in Mike Shepherd's playful, vigorous production, the versatile cast leap from scene to scene, turning a simple wooden gantry into a clifftop, a ship, a drawing room, a guillotine.

Darke gives shape to a Cornish identity that feels vital and real and has nothing to do with clay pipes and clotted cream. He has an evident love for his native dialect and writes rich, earthy dialogue with which the fine cast are totally at home. Carl Grose and Bec Applebee as Eddie Carter and Bessie the landlady give riveting, utterly convincing performances, while Tristan Sturrock as John Carter is splendid: impetuous, wily, proud.

The play's weak spot lies in the characterisation of the Stackhouses, which is fairly flimsy and monotone. But this is a rich and good-humoured work that embarks on its task of navigating Cornish identity with admirable stealth and is full of wicked contemporary barbs. There is no mistaking the irony when, at the end, Eddie Carter gives up smuggling to take up fishing.

The King of Prussia runs to Saturday at the Donmar Warehouse, then tours; the "Four Corners" season continues with plays from Wales, Ireland and Scotland (0171-369 1732).



Charlie Barnecutt and Tristan Sturrock in 'The King of Prussia' by Nick Darke

Opera in Stockholm/**Martin Hoyle**

Don Giovanni

A Don Giovanni for the age of Aids? A *Don Giovanni* with a specifically Christian bent? Both courses bristle with dangers, from sentimentality to kitsch. Stockholm's Folkoperan (People's Opera) triumphantly avoids all the traps in the most theatricaly riveting production of Mozart's *dramma giocoso* I have ever seen. Directed by Peter Stormare, with sets by John Conklin, it was premiered by Glimmerglass Opera, New York, last July.

A child in a nightgown wanders on during the overture; through the gauze we see the characters of the drama slumped, seated, sprawled. The child touches them into life; she puts on the cliché Mozart powdered wig and frock coat, and prowls watchfully through the action.

What might have been merely sentimental has a wonderfully practical side – in the Act 1 finale, for example, where the Don, surrounded by armed enemies, is usually miraculously free with one bound. Here Don Ottavio places a pistol at the seducer's head. The music ends to a black-out; a shot rings out; but the lights come back and Giovanni is missing to everyone's bewilderment. The wise child Mozart comes forward drawing the magician's shutter-gesture across her face to reassure us the Don will be back after the interval. When Ottavio draws the noose tight round Leporello's neck the child snaps its fingers and time stands still as the characters freeze – except for the servant who thankfully makes his escape.

Most controversial of all is Giovanni himself. This Don is half in love with easeful death from his first appearance lolling in post-coital exhaustion with a plainly possessive Donna Anna. He languidly kills the Commendatore with little effort: the old man drops his sword, aghast at something in Giovanni's face: his own and others' deaths perhaps. This Don Juan can hardly walk: Leporello pushes him around the stage in a wheeled chair. Yet he remains the compulsive philanderer throughout, his ebbing life concentrated on the only thing he can do. This is brought out in the unbearably poignant staging of the serenade. His head thrown back, sprawled in his invalid chair, Olle Persson sings in an exquisite mezza voce to the unseeing maid, a robust peasant girl who strips and washes, exuding health and youth from every pore.

Giovanni's end is marked by writhing agony at the invisible Commendatore's amplified voice (Olle Sköld, sounding like Fafner). The child-guardian darts forward to cradle his head as he falls, and then gently raises him, a young, handsome man again. Giovanni looks wonderingly at the others, touches his victims (Elvira, Leporello) who absently brush away this half-felt presence, and wanders into immortality. Despite the hell to which he is consigned by words and music, this Giovanni illustrates the Christian tenet of hating the sin and loving the sinner. After all, redemption is as much part of the conventional Christian picture as hell-fire.

None of this would work without both acting and singing of superb ensemble quality. Persson is a young baritone who will surely be heard abroad. Fredrik Zetterström's bright-voiced young Leporello, is a good sort driven to exasperation by his demanding master, Anna (Clara Bystrand) benefits from the production's intimate approach, not hurling out "Or sai chi l'onore" but treating it as an emotional journal; Elvira (Christina Högman) similarly dramatises "Mi tradì", a half-smiling, half-weeping comparison of past happiness with present pain. Klas Hedlund is a superb vocal stylist in both Ottavio's arias.

The extremely fine orchestra is conducted by Michael Bartosch. This wonderful production where not a note or a word is taken for granted, is double-cast and runs until May.

INTERNATIONAL

ARTS GUIDE

AMSTERDAM

CONCERT
Concertgebouw
Tel:31-20-5730573
● Radio Kamerorkest: with conductor Jos van Immerseel and the Groot Omroepkoor perform Gade's Symphony No. 3 and Haydn's Mass No. 3 (St Cecilia). Soloists Susan Gritton, Bernarda Fink, Ivan Sharpe and Eike Wilm Schulte; 3pm; Mar 9

BERLIN

DANCE
Komische Oper Tel: 49-30-202600
● Romeo and Juliet: a choreography by Tom Shilling to music by Prokofiev, performed by the Ballett Komische Oper; 7pm; Mar 9
OPERA
Deutsche Oper Berlin
Tel: 49-30-3438401
● Die Zauberflöte: by Mozart. Conducted by Stefan Soltesz and performed by the Deutsche Oper Berlin. Soloists include Peter Seiffert, Kirsten Blank, Marcia Bellamy and Clemens Bieber; 7pm; Mar 11

BONN

OPERA
Oper der Stadt Bonn
Tel: 49-228-7281
● La Rondine: by Puccini. Conducted by Eugene Kohn and performed by the Oper Bonn; 8pm; Mar 7

CHICAGO

THEATRE
The Goodman Theatre
Tel: 1-312-443-3822
● Arcadia: by Tom Stoppard. Directed by Michael Maggio, starring Kristine Thatcher, Patrick Clear, Fleur Phillips and Steve Cell; Mon Mar 11: 7pm, Tue – Thur, Sun 7.30pm, Fri, Sat 8pm, Thur, Sat, Sun also 2pm; from Mar 11 to Apr 14

HAMBURG

CONCERT
Musikhalle Hamburg
Tel: 49-40-346920
● Philharmonisches Staatsorchester: with conductor Gerd Albrecht, soprano Julia Faulkner and tenor Wolfgang Fassler perform works by R. Schumann and Zemlinsky; 11am; Mar 10, 11 (8pm)

LAUSANNE

CONCERT
Salle du Métropole
Tel: 41-21-3122707
● Orchestre de Chambre de Lausanne: with conductor Jesus Lopez Cobos and violinist Julian Rachlin perform works by Schubert, Bruch and Schoenberg; 8.30pm; Mar 11, 12 (8pm)

LEIPZIG

OPERA
Oper Leipzig Tel: 49-341-1261261
● Il Trovatore: by Verdi. Conducted by Neuhold and performed by the Oper Leipzig and the Gewandhausorchester. Soloists include Scharkowskaya, Hoffstedt, Grisales, Tsumaya, Noack and Gaviola; 7pm; Mar 9

LONDON

EXHIBITION
National Gallery
Tel: 44-171-7472885
● In Trust for the Nation: Paintings from National Trust Houses. The display brings together more than 90 paintings that can still be seen in 29 of Britain's country houses. It includes works by Sir Anthony van Dyck, Philippe Mercier, William Hogarth, Andrea del Sarto, Albert Cuyp, Jan Steen, Titian, Velázquez and Rembrandt; to Mar 10
OPERA
Royal Opera House - Covent Garden Tel: 44-171-2129234
● Semele: by Handel. Conducted by Charles Mackerras and performed by The Royal Opera. Soloists include Ruth Ann Swenson, Judith Howarth, Felicity Palmer and Michael Chance; 7pm; Mar 8

LUXEMBOURG

OPERA
Théâtre Municipal Tel: 352-470895
● Prince Igor: by Borodin. Conducted by Valery Gergiev and performed by the Kirov Opera; 8pm; Mar 8, 9, 10

MUNICH

CONCERT
Philharmonie im Gasteig
Tel: 49-89-48098625
● London Philharmonic Orchestra: with conductor Franz Welser-Möst perform Mozart's Symphony No. 34 in C, Brahms' Symphony No. 3 in F, and Dvorák's Symphony No. 7 in D minor; 11am; Mar 10

NEW YORK

CONCERT
Carnegie Hall Tel: 1-212-247-7800
● Toronto Symphony Orchestra: with conductor Jukka-Pekka Saraste and violinist Frank Peter Zimmermann perform Beethoven's Violin Concerto in D major, Op. 61, and Sibelius' Symphony No. 6 and Symphony No.7; 8pm; Mar 9
OPERA
New York State Theater
Tel: 1-212-875-5570
● Der Rosenkavalier: by R. Strauss. Conducted by Alexander Sander and performed by the New York City Opera; 8pm; Mar 9

PARIS

CONCERT
Théâtre des Champs-Elysées
Tel: 33-1 49 52 50 50
● Kyung-Wha Chung and Peter Frankl: the violinist and pianist perform sonatas by Schubert and R. Schumann; 11am; Mar 10
THEATRE
Comédie Française, salle Richelieu Tel: 33-1 40 15 00 15
● Dom Juan: by Molière. Directed by Simon Eine. The cast Inludes Alian Pralon, François Beaulieu, Dominique Constanza, Yves Gasc, Martine Chevallier and Catherine Sauval; 8.30pm; Mar 7, 10, 11

SAN FRANCISCO

EXHIBITION
California Plaza of the Legion of Honor Tel: 1-415-863-3330
● Picasso, the Sculptor: this exhibition of some 15 works celebrates the re-opening of the Legion of Honor; to Mar 10

STOCKHOLM

CONCERT
Konserthuset Tel: 46-8-7860200
● Violinist Benjamin Schmid and cellist Tanja Tetzlaff; 7.30pm; Mar 11

STRASBOURG

DANCE
Théâtre Municipal de Strasbourg - Opéra du Rhin Tel: 33-88 75 48 00
● Nederlands Dans Theater 1: performs Jiri Kylián's choreographies No More Play, Petite Mort, Overgrown Path, Sweet Dreams and Sechs Tänze; 8pm; Mar 8, 9

SYDNEY

CONCERT
Concert Hall Tel: 61-2-250-7111
● Hesperion XX: with conductor Jordi Savall and soprano Montserrat Figueras perform works by Guerrero, Correa, Monteverdi, Scheidt, Cabezon and others; 8.15pm; Mar 7
OPERA
Drama Theatre, Opera Theatre, Playhouse Tel: 61-2-250-7127
● A Midsummer Night's Dream: by Benjamin Britten. Conducted by Tom Woods and performed by The Australian Opera. Soloists include Gillian Sullivan, Elisa Wilson, Kirsti Harms, Christopher Josey, Davis Collins-White and Michael Raymond Martin. Part of the Sydney Festival '96; 7.30pm; Mar 8

THE HAGUE

CONCERT
AT&T Danstheater
Tel: 31-70-3609931
● The Gambler: by Prokofiev. Conducted by Valery Gergiev and performed by the Kirov Opera; 8pm; Mar 11, 12, 13

VALENCIA

CONCERT
Palau de la Música i Congressos
Tel: 34-6-3375020
● Orquesta de Valencia: with conductor Manuel Galduf perform works by Beethoven and Stravinsky; 8.15pm; Mar 8

VIENNA

CONCERT
Konzerthaus Tel: 43-1-7121211
● Alexei Lubimov: the pianist performs works by J.S. Bach/Czerny, Ustwolskaja and Debussy; 7.30pm; Mar 8
OPERA
Wiener Staatsoper Tel: 43-1-514442960
● Maria Stuarda: by Donizetti. Conducted by Jan Latham-König and performed by the Wiener Staatsoper. Soloists include Agnes Baltsa, Mara Zampieri, David Kuebler and Kurt Rydl; 7.30pm; Mar 7, 10 (7pm)

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Financial Times Business Tonight

Midnight
Financial Times Business Tonight

Ian Davidson

Orthodox doctrine reversed

The big idea at the European Union's inter-governmental conference will be a proposal to move towards faster integration for an inner core of member states

It is now clear that Mr John Major will be offered a large backhand victory in the inter-governmental conference on the future of the European Union which begins in Turin at the end of the month. He may not like the victory when it comes, but that is politics: there is no gratitude.

Mr Major set out his vision of the European Union in a speech at the University of Leiden 18 months ago. He said he wanted to see a more flexible Union, in which some member states would move ahead of the rest, to integrate more closely in certain areas.

The traditional idea of a unitary community was, he believed, out of date. A flexible, multi-track Europe would be essential if the Union was to be enlarged to the east, and if it was to contain the diversity of its many members.

These propositions were denounced as a foul attack on the orthodox doctrine of European integration – that all EU member states must participate equally in all policies and in all institutions.

They might approach a common destination at different speeds: the programme for economic and monetary union allows for some member states to meet the economic conditions for joining the single currency before others. But it was heresy to advocate an *à la carte* – or pick-and-choose – approach to integration.

Most member states, led by Germany, want far-reaching reforms, to be agreed at the inter-governmental conference – including a wholesale increase in the number of decisions subject to majority voting. But since the UK government has already made clear that it will reject any reform of such significance, there is a danger the conference will end in impasse.

As a result, there is now the prospect of an extraordinary reversal in EU orthodoxy. For it is almost certain that the big idea in the coming conference will be "flexibility", or multi-track integration.

It will be pressed, not by the British, but by a powerful coalition led by France and Germany. And it will not be intended to promote some kind of loosening of the Union; on the contrary, it will open the door to the formation of an inner core of member states willing to move towards greater integration to circumvent British obstructiveness.

In other words, what will be proposed is not just the wholesale reduction, or even elimination, of national vetoes on detailed policies in the Union. It will be the virtual removal of national vetoes on the future general direction of European integration.

Advance indications of a push for a radical new kind of flexibility in the European Union have been building ever since France and Germany included the idea in a joint paper published last December. This said: "The temporary difficulties of one of our partners to keep up with the forward movement ought not to be an obstacle to the Union's capacity for action and progress.

"For this reason, we judge it desirable and possible to introduce into the [European Community] treaty a clause of a general nature which would permit states which have the will and the capacity to develop between themselves closer co-operation in the single institutional framework of the Union." (These last words mean that any new inner core would still be part of the Union.)

The Franco-German proposal only came into focus last week, when the principle of flexibility and the option of faster integration for an advance guard of states were openly endorsed by the Commission in the paper it has prepared for the inter-governmental conference. It suddenly became clear that this is going to be *the* central issue at the conference.

The Commission is, in some sense, the moral guardian of the European Community treaty and the orthodoxy of European integration. So if the Commission endorses a radical departure from the dogma of a unitary community, we can be fairly sure that the idea must have widespread support among member states; which means it really may be on the cards.

Last week France and Germany took this principle of flexibility a step further, with a joint proposal to introduce a system of "constructive abstention" into the development of a common foreign and security policy. Under this, no member state would be obliged to take part in a joint action against its will, but it could not prevent others from going ahead together.

The question is: why now? It is easy to see that there could be total deadlock over the future development of the Union between the UK and its partners at the inter-governmental conference. If that happens, it is also easy to imagine that the others would look for ways to side-step the British obstacle. But why are France and Germany setting up this radical – some would say divisive – attack on the ideal of a unitary community, even before the conference?

There are, I think, two reasons, one long-term, the other short-term.

The long-term reason is that Mr Major is right: in a much enlarged Union, multi-track integration will be unavoidable.

The Commission is already arguing that the Common Agricultural Policy cannot simply be extended to eastern Europe, because it would inflict damaging inflation on those countries by forcing up food prices. If countries in eastern Europe are to join the Union, they will not be in a position to take part in all policies immediately.

The short-term reason is Mr Tony Blair, the leader of the UK Labour party. There was a time, not so long ago, when Germans and others were openly arguing that the inter-governmental conference should be deliberately extended beyond the next British general election, in the expectation that a Labour victory would bring a UK government more accommodating in Europe.

That expectation is now, I believe, widely discounted in other capitals. Mr Blair may or may not be more pro-European by instinct. But nothing he has said indicates he is prepared to endorse anything like the German agenda for a radical reform of the European Union in a more federalist direction.

If so, the main result of dragging the conference out beyond the British election would be to relieve John Major of any incentive to negotiate. It would thus intensify the conflict between the UK and the rest; but without any sufficient prospect of a better deal later.

In which case, it makes sense to reverse the order of events, and start by offering the British what they most appear to want: the right not to take part.

"There are two tragedies in life," said George Bernard Shaw. "One is not to get your heart's desire. The other is to get it."

European viewpoint: John Major set out his vision 18 months ago

The Growing Business · Richard Gourlay

Europe left standing on the starting blocks

American venture capitalists are quicker to invest in technology-based newcomers

The latest figures on US initial public offerings of shares in young companies demonstrate the impressive ability of American venture capitalists to nurture growing businesses.

In 1995 more than $8.1bn was raised in such offerings by companies that had received part of their private equity funding from institutional venture capital funds. This was double the previous year's figure, according to Ventureone, the California-based investment research group which collates the figures.

More than $5.6bn of the 1995 total was raised by 163 companies backed as start-ups or as "traditional early-stage deals". Another $2.5bn was raised by 40 companies in leveraged buy-outs or development capital.

One reason so much is invested in high-tech start-ups, Ventureone suggests, is that venture capitalists can sell to the public markets while the companies they have backed are still immature. The average communications and networking company, for instance, was making a $3m net loss at flotation, had sales of only $13m, had raised $19m of private equity before flotation and had 121 employees.

The average electronics and computer company was losing $700,000, had sales of $25m, had raised $14m and had 146 employees. It had enjoyed venture capital backing for about five years.

The Ventureone report also looks at the number of venture-backed businesses that made their founders wealthy. Fourteen entrepreneurs held a personal stake at the time of flotation of $50m, compared with eight the previous year.

Most of these fortunes were made in technology stocks. But whereas communications and computer networking companies formed the largest segment of the initial public offering class in previous years, software companies dominated in 1995 and not just because of the Netscape flotation. The hottest area was client-server architecture, the networks that link PCs to a larger central computer.

To underscore the scale of venture-backed success in 1995, the companies continued to climb after their first trading day. On average, shares of the 203 venture-backed companies that floated in 1995 rose by 53 per cent, compared with 30 per cent for the companies floating in the previous year.

Venture capitalists in Europe will view these figures with considerable envy. They say they would back more young technology-based businesses if they could float the companies they backed earlier. But it can be much harder to launch new companies on European markets.

In the UK, for example, relatively few start-up companies have floated in the past five years. Most of those that have floated were biotechnology companies such as British Biotech and Celltech, allowed to the main market under a modification to the rules requiring a three-year trading record. More recently London's Alternative Investment Market has shown some signs of being a market for young companies but has still to prove it can raise large amounts of capital.

Mr Rolf Selvig, marketing director of Ventureone, says the lack of public markets for young high-tech companies is Europe's Achilles' heel as regards the continent's ability to create wealth.

"In the UK there is no exit for investors in the venture capital-backed companies so the motivation to make investments is being removed right up front because the investors can't get back out," says Mr Selvig.

Like other US observers of European stock markets, he says exchange officials are too focused on protecting investors against business risk. They should instead focus on ensuring companies come to the market with accurate listing particulars and leave investors to make their own decisions about business risk.

The shape of US companies when they came to market in 1995

Average attributes ($m)	Communications/ networking	Electronics/ computers	Healthcare services	Medical compounds	Retailing/ consumer	Software/ information services
Employees	121	146	[illegible]	74	[illegible]	[illegible]
Amount raised in private equity	19.0	14.2	25.0	22.2	10.6	12.4
Revenues*	[illegible]	25.1	[illegible]	2.9	[illegible]	[illegible]
Net income*	-3.0	-0.7	-6.7	-5.4	3.2	0.4
Company age (in years)	[illegible]	12.3	10.0	7.9	11.5	[illegible]
Time from funding to flotation	4.4	5.9	6.4	5.9	5.7	4.0
Total flotations	[illegible]	[illegible]	4	17	10	[illegible]

Based on 163 venture-backed startup companies which completed flotations in 1995 *last full fiscal year Source: Ventureone

·LETTERS TO THE EDITOR·

Number One Southwark Bridge, London SE1 9HL

We are keen to encourage letters from readers around the world. Letters may be faxed to +44 171-873 5938 (please set fax to 'fine'). e.mail: letters.editor@ft.com. Translation may be available for letters written in the main international languages.

A choice that would destroy individual liberty

From Mr Stephane Aderca.

Sir, Edward Mortimer bemoans the loss of collective choice in favour of individual choice ("Surfeit of good things", February 28). But the collective "choice" he advocates is nothing more than the destruction of individual liberty. Could anyone claim that freedom of religion still existed if it were decided that a vote were to be taken as to which religion "we" shall adopt, and the result is binding on all? Of course not. Having one vote in millions as to which religion to adopt is not the same thing as to be able to choose one's religion. Democracy and liberty are not equivalent. Democracy is about the source of government power, liberty about its extent. If a democratic government uses coercion without restraint, citizens are no more free than under a dictatorship.

Mr Mortimer is correct in his assertion that "if every choice is left to the market, the right to vote becomes meaningless, because the people you elect have no power to change anything". But this is the way things should be in a free society. Liberty means that coercion should be used only to prevent coercion and dishonesty. The power of politicians to change things is based on the power to coerce. In a liberal democracy, this coercion should not exist.

There is no liberty in a democracy when every citizen knows that the result of the next election could mean coercion imposed by fellow citizens. In fact, one could say that the hallmark of a liberal, versus a totalitarian, democracy is that the result of elections don't matter. This is the best guarantee that freedom can never be threatened by any election.

The loss of collective "choice" or "freedom" is not a great loss. There is no such thing as group "liberty", which is nothing but the freedom of the group to oppress individuals. Only individual liberty is meaningful.

**Stephane Aderca,
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Downside of utility mergers

From Mr Christopher J. Clarke.

Sir, David Lascelles' article "Power groups in overseas charge" (March 5) highlights why utilities are active in overseas mergers and acquisitions as growth dries up in the developed world and the industry restructures on global lines. It might be worth dwelling on the dangers by way of balance.

Academic research shows very small or negative returns to acquirers' shareholders against 25 per cent to 30 per cent returns to vendors' shareholders. Is there a compelling reason why newly liberated and fledgling utility managements should beat the experts on these averages?

Deploying core competencies across geographic or cultural boundaries is notoriously difficult. Cross-border M&A is, therefore, even more hazardous. Arguably, investors can invest in growth utilities overseas directly. Why should they pay novice diversifiers to do so for them? Many leading investment institutions we have spoken to are rather keen that utilities remain low-risk, steady return investments in their home markets.

We are not arguing against M&A in the power industry. It has an important role to play in global restructuring. We are arguing for great caution and careful analysis and planning!

**Christopher J. Clarke,
vice-president - utilities,
A.T. Kearney,
visiting professor, Henley Management College,
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London W1X 5DH, UK**

Best for London Stock Exchange

From Mr Steve Hull.

Sir, I would like to set the record straight on a number of comments concerning the London Stock Exchange in George Graham's feature "Blood on the road to the promised land" (March 5).

The first is that the Stock Exchange Tower, which is the main freehold asset of the exchange, is not half empty, as suggested. It has three substantial tenants, and in December 1995 heads of agreement were reached with the London International Financial Futures and Options Exchange, which means that when it begins occupying more than 75,000 sq ft of space in the middle of this year, there will be no vacant space.

In line with our business plan, and against a projection of future space management needs, I have been managing an aggressive policy which will ensure that we generate income from any exchange property likely to become surplus to our needs.

Wherever possible, leases have been surrendered or disposed of on sound terms. Where this has not been possible, we have successfully sub-let all of our surplus property. In planning for the exchange's future, we have considered all options available to us and, given that we own the tower, together with the cost of moving, I believe our strategy is both the cheapest and the best.

**Steve Hull,
head of personnel & property,
London Stock Exchange,
London EC2N 1HP,
UK**

Schemes for reducing unemployment not comparable

From Mr Gerald Holtham.

Sir, The cost of job creation is relatively modest, as Mr John Edmonds said (Letters, February 29), because the cost of keeping people on the dole in the UK is so high. Moreover, it is possible to devise schemes which reduce the NAIRU (the rate of unemployment at which inflation accelerates) and are therefore not inflationary.

Mr Edmonds mentioned an Institute of Public Policy Research scheme to create half a million jobs for less than £2bn a year. Your readers may have the impression that it is a modest version of another plan, by the Full Employment Forum, also mentioned by Mr Edmonds, which sought to create a million full-time jobs at a cost of 1.5 per cent of gross domestic product. However, the schemes are not comparable since the Full Employment Forum plan entails expansion of aggregate demand and depends on the economy being able to sustain such an expansion without inflation going out of control. Depending on where the economy is in the economic cycle, it may sometimes be appropriate and sometimes not.

The IPPR scheme is explicitly presented as additional to anything that can be achieved for unemployment by the appropriate setting of demand side (fiscal and monetary) policies. It is aimed at the long-term unemployed, people who would mainly not benefit from a general boost to demand before it triggered rising inflation.

For what it is worth, I would guess that demand policies could reduce unemployment by some half-million. The IPPR scheme on top could give a total reduction of about 1m. A further reduction would require radical changes to the tax and benefit systems and perhaps to the wage system. I fear that an attempt to reduce unemployment durably by 1m or more purely through demand reflation would be inflationary.

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FINANCIAL TIMES

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Wednesday March 6 1996

Turmoil over Tokyo rescue

The long-suffering Japanese public is making its voice heard in the row over plans to bale out financial institutions with Y685bn ($6.5bn) of taxpayers' money. Popular anger at the scheme to rescue companies that over-extended themselves in property is so great that the government may find it impossible to push the proposals through parliament. That need be no disaster. On the contrary, political leaders should regard the impasse as an opportunity to push through radical reforms.

Until now, the powerful finance ministry has made all the running in handling the aftermath of the property boom. Naturally, it has strived to protect its own interests and those of the financial institutions in its charge. To achieve its ends, the ministry has tried to bully politicians – and the public – into accepting its view that finance is so complicated that it should be left to experts.

Unfortunately for the bureaucrats, its claim to expertise has been undermined by the property boom and bust, which also exposed widespread incompetence and crime in financial markets. In the past, the Japanese were willing to trust the ministry. But the public has now rebelled against the suggestion that their money should be used to refinance what has proved to be a rotten system.

The ministry argues that, without the rescue, the country's financial institutions could be swept into mass insolvency, but promises reforms once the funds are in place. Japanese taxpayers have decided to call this bluff. By opposing the rescue, they are indicating their willingness to risk a run on the banks. They have decided it is better to see what happens if the housing loan companies collapse than believe the ministry's warnings.

The politicians should follow the public's lead. The half-baked rescue plan for the housing loan companies should be scrapped. If they fail, there may or may not be a run on banks, as the ministry has warned. If there were, there would still be time for a rescue, but taxpayers would then be in a better position to judge whether public money should be used.

So Mr Ryutaro Hashimoto, the prime minister, should change his mind. The jusen are not the only institutions in trouble over property loans. A botched rescue would set a dangerous precedent.

Above all, politicians should insist that the price of any rescues must be radical reform of the financial system. Hitherto, the bureaucrats' response to the crisis has been a series of *ad hoc* adjustments to the regime. But it is painfully clear that a regime which has vested so much discretionary power in the hands of one ministry has failed. If there are to be bale outs, there must simultaneously be an overhaul of the financial system to make it more open, more transparent and more competitive.

Cautious steps

The suggestions for upgrading the European Union's external policy that were laid out in Paris yesterday by Mr Malcolm Rifkind are very British: limited, practical and intended as a counter-weight to more ambitious ideas. They are welcome as far as they go.

The foreign secretary moved closer to Britain's EU partners, notably France, by endorsing the idea of a "Mr Europe" who would personify the union. He has also given a qualified welcome to the Franco-German proposal for a system of "constructive abstention" that would allow countries to avoid backing a foreign policy initiative without blocking it either.

But even in these areas, Mr Rifkind is proceeding cautiously. He is careful to state that the new Mr Europe would be answerable to EU member governments, not the Commission. He sees the principle of "constructive abstention" as a complement to the right of veto, not a substitute. And unlike the French, he is adamant that countries cannot be expected to provide money for initiatives from which they have abstained.

Mr Rifkind's other ideas – better planning, faster reflexes and more frequent meetings between senior diplomats – are too sensible and innocuous for anyone to raise much objection. They have also been carefully formulated so as to avoid any danger that EU's foreign policymaking machine could escape the member states' control.

However cautious its proposals, the UK government's plunge into the EU foreign policy debate is long overdue. Equally welcome is the effort to maximise agreement with France. Any external policy with teeth must begin with consensus between the two EU members with the widest global reach and the ability to project military force overseas.

His caution, moreover, is understandable. Mr Rifkind is right to say that institutional tinkering is no substitute for a genuine will to act. In areas where the sovereign states disagree, no procedural changes will conceal those differences.

Indeed, he might have been quoting from Mr Richard Holbrooke, the caustic US observer, when he observed that the EU lacked the "coherent world vision" which underpinned the policies of sovereign nations.

But he is too complacent when he calls this situation a fact of life which is not to the EU's discredit. Whatever institutions they adopt, the moment when European nations have no choice but to co-operate more closely could come more quickly than most realise. The isolationist mood in the US means that Europe could well be left on its own to cope with the next regional crisis.

Mr Rifkind is right to say that neither institutions nor procedures will solve this sort of problem. But Europe's squabbling over institutions is only a symptom of a deeper reluctance to accept the need for collective action. Once that need is acknowledged, the institutional questions may solve themselves.

Company deaths

If someone dies and a company is to blame, there is probably little that relatives or friends can do about it. Almost all attempts to hold companies responsible under present law fail. According to a sensible set of proposals from the Law Commission, published yesterday, that could change.

The commission, the government's law reform organisation, recommends creating a new offence of "corporate killing", applicable where gross carelessness by a company results in deaths. The commission wants companies convicted of the charge to be liable to an unlimited fine, and also to be ordered to remedy the cause of death. In some cases, it is suggested, fines could run into millions of pounds.

The change would not represent any weakening of present law, as it would still be possible to pursue individual directors under existing manslaughter law where that appeared applicable.

The proposals, which are likely to have considerable popular support, recognise the steady level of public concern and frustration over the present difficulty of holding companies responsible. In many disasters in the past decade, companies have been deemed to be seriously at fault, but prosecutions failed. Such cases included the 1987 Herald of Free Enterprise capsize when 187 people died; the 1988 Piper Alpha oil platform explosion, when 167 died; and the 1988 Clapham rail crash, in which 35 people died.

A record of failed prosecutions is not in itself a reason for changing law. However, the proposals rightly recognise the shortcomings of existing law on corporate manslaughter, which requires prosecutions to identify a single person as the company's "controlling mind". There are many cases where sole responsibility is not discernible, but where many would still feel that the company as a whole was responsible.

The recommendations are welcome partly because they reflect those realities of corporate organisation, particularly in large companies. They are also valuable because, if implemented, they might well have more influence on directors' actions than does present legislation. Executives would think carefully about behaviour which could easily incur an unlimited fine, where they – rightly – regard the threat of going to jail under present laws as remote.

The commission was right, however, to stop short of recommending that individual directors should be jailed for the carelessness of the company as a whole. In practice, that provision could have undermined the new proposals, by complicating prosecutions with exactly the questions of individual responsibility which the proposals seek to avoid.

Ministers must now decide whether to put forward legislation on the commission's recommendations. They should do so.

The private sector must take a greater role in helping Americans to move from the old economy to the new, says **Robert Reich**

A hand across the great divide

Pat Buchanan may fade from the political scene in the run-up to November's presidential election. But his campaign is fuelled by anger over the falling living standards of many Americans which is unlikely to subside.

Wage disparities have been widening and real wages sliding since the late 1970s. Although the Clinton administration has restored job growth and shrunk the deficit, and median wages have stopped falling behind, the long-term challenge of restoring wage growth remains.

But while Mr Buchanan has identified the right issue, his solutions are irresponsible and dangerous. The fault does not lie with immigrants, the World Trade Organisation, the North American Free Trade Agreement, welfare mothers, affirmative action, venal corporations or rapacious chief executives. It lies in two huge changes in the way the economy is organised.

The first is the enormous pressure the old mass-production system that used to provide good middle-class jobs has come under from new information technologies and global trade and investment. This has caused the economic earth to crack open, leaving tens of millions of Americans trapped on the wrong side of a great divide.

Contrary to the views of some neo-Luddites, the result is not fewer jobs. There are many new ones, but the good ones lie on the other side of the divide. They require technical or problem-solving skills and the capacity to acquire new skills continuously. Machinists are being supplanted by operators of computer-controlled machine tools; garage mechanics, by automotive technicians who can diagnose and repair the electronic gadgets which control today's cars; clerks by office technicians skilled in using computers for storing and updating data.

In every advanced economy, demand is rapidly shifting in favour of people with such skills and against people without them. The earnings of the former are rising; the earnings of the latter are dropping (or, as in much of western Europe, they are unemployed).

Those who remain trapped in the old economy either do not know what skills are needed, or cannot afford the costs of getting them, or feel too old to learn, or cannot easily uproot and move to where good new jobs can be found. As a result, most Americans who lose their jobs and find new ones never return to previous levels of earnings.

The second big change is that the implicit social compact which used to bind corporations with their workers has come undone. Thirty years ago, a company that earned healthy profits could offer its employees secure jobs with rising wages and benefits – and their communities could count on a steady tax base.

If the economy turned sour, employees might be laid off for a time. But when the economy revived, the work would return. The very term "lay-off" suggested a *temporary* separation. Unions played an important role in enforcing this compact, but it was enforced primarily by public expectations – an unspoken but widely-accepted norm that when a company did well, its employees and community would also do well. For a business not to share the benefits of its success would have been unseemly.

Those days are over because of intensifying competition for investment. Deregulation has forced airlines, telephone companies, utilities, distribution networks and financial markets to mind the bottom line. Information technology has shrunk transaction times between suppliers and customers. Easy access to capital markets has allowed small companies to grab market share from big ones.

Add the convenience with which vast amounts of capital can now be moved at the push of a key on a personal computer and the result is "electronic capitalism" – a world-wide system for immediately redeploying financial assets where they can earn their highest return.

Gone forever is the gentlemanly investment system that once allowed chief executives to balance the interests of shareholders against those of employees and communities. Now, chief executives who *don't* abandon their employees and communities when the bottom line requires it risk trouble – while those who do are able to pocket multi-million dollar bonuses and stock options. Even the term "lay-off" no longer means what it used to. Most lay-offs are now permanent. A new word is needed to describe this phenomenon – perhaps "cast-offs", rather than lay-offs. This change in the implicit social contract makes it harder to deal with the more competitive business environment. The modern corporation's sole focus on maximising shareholder returns makes it less able to ease the workforce's transition to the new economy.

Nations as a *whole* are better off when employers teach their workers basic or industry-wide skills beyond what is required to function effectively in their current job. National economies as a whole are more flexible and productive when employers ensure workers who are no longer needed get trained for and placed in new jobs. Yet, because shareholders don't reap the full benefits of such investments, even the most enlightened chief executive is loathe to make them to the extent that society needs.

What may be rational for each individual corporation is irrational for society. Almost three-quarters of national output comes from people; only a quarter from machinery. The quality of a nation's labour force is the engine of economic growth; physical capital is the caboose.

If a significant portion of the workforce lacks the skills to succeed in the new economy, everyone's standard of living is imperilled. Widening inequalities and insecurities also contribute to crime, delinquency and threats to public health.

Can government fill the breach? Only partly. While government can help people get job skills and offer support when unemployed, massive accumulations of public debt over the last 15 years require austerity. As President Clinton noted in his State of the Union address, "the era of big government is over".

To be sure, government can make more effective uses of its resources. For example, the administration has taken steps to change the unemployment insurance system – designed to provide income support during temporary lay-offs – into a re-employment system designed to move people rapidly into new jobs. The President wants to consolidate federal job-training programmes into vouchers which unemployed or low-wage workers can use at community colleges or technical schools to obtain skills. He has also proposed significant tax deductions to offset family expenses for university education or job training.

But the public sector cannot possibly do the job alone. The private sector must take more responsibility for helping Americans across the great divide from the old economy to the new. Business will need incentives to do things which do not necessarily improve shareholder returns but benefit society as a whole.

One possibility (this is far from a formal legislative proposal) would be to reduce or eliminate corporate income taxes for companies that achieve certain minimum requirements – for example upgrading the general skills of employees, sharing more of the profits with them and, when laying them off, retraining and placing them in new jobs.

This is a modest measure. Charitable enterprises are already spared paying income taxes; partnerships and proprietorships also receive favourable tax treatment. These differences reflect judgments about the social benefits and responsibilities stemming from these different forms of organisation.

But the same logic can be applied to business: there are social advantages in improving the quality and flexibility of the workforce, and societal costs in failing to do so. Certain enterprises may be well-positioned to maximise these advantages and minimise these costs – better positioned than others, and surely better positioned than government. Society should encourage them to do so, and reward them accordingly.

Those who worship at the altar of the free market need not fear blasphemy. Corporations would not be required to keep on workers who do not contribute to the bottom line, nor to remain in communities if there are more efficient places to produce. It would be a simple *quid pro quo*: lower – or no – corporate income tax for accepting more responsibility for the social costs and benefits of economic change.

Where to make up the lost revenues? One possible source would be ending the myriad special subsidies and tax breaks targeted to particular companies, which provide no appreciable public benefits. Such corporate welfare totals over $100bn a year in the US, according to the estimates of think-tanks across the political spectrum.

Others will have different ideas for how corporations can best respond to the growing inequalities and insecurities experienced by working people trapped in the old economy. But discussion about the proper role of the corporation at this unique moment in history is no less important than the current discussion on the role of government.

When so many are foundering in the face of record profits and a soaring stock market, the failure of the private sector to respond imperils continued prosperity and stability. If too many people feel excluded from the gains of a growing economy and disproportionately burdened by its risks and costs, they will eventually support policies that sacrifice growth in favour of economic security – such as trade protection, capital controls and inflexible employment rules.

The author is US secretary for labor in the Clinton administration

· O B S E R V E R ·

David takes on Goliath

■ An unseemly spat has broken out between Morgan Stanley, the blue-chip US investment bank, and David Roche, who used to be its hotshot European research chief. Roche, who now runs his own research outfit, Independent Strategy, is upset because his old employer has had the temerity to question his views on China's future.

The dispute has its roots in an article Roche wrote for the Wall Street Journal early last month. Roche takes a more bearish view of China's long-term prospects than Morgan Stanley. Nothing too astonishing in that, as his old employer has high hopes for China; it helped set up China's first international investment bank and is keen to win lots of business.

Roche's real gripe is that Morgan Stanley Asia responded to his article by sending a fax to clients saying that Roche's argument is "really quite misleading" because it exaggerates the level of inefficiency in state-owned enterprises. Roche has responded with a letter to *his* clients, saying that the Morgan Stanley fax is – wait for it – "highly misleading".

"It seems to us unusual (if not unprecedented) for a major global investment bank to start a debate in such a personalised way," thunders Roche. "We have known (at first hand!) the pressures of producing objective research within an integrated investment house," he notes sanctimoniously.

For those missing the point, Independent Strategy stresses that it's "neither restricted by any vested interests nor influenced by the pressures of national governments". One can almost hear the roar from the world's financial markets – thank heavens for David Roche.

His master's voice

■ Open him up, and the UK prime minister John Major will probably have Seoul engraved upon his heart. In Seoul on the last day of its Far East tour, Major's entourage was heartened to read an editorial in one of the local English-language dailies, the Korea Herald.

The Korean scribe began calmly enough, describing Major's jaunt as a "fitting and propitious occasion to further the cordial and productive relations" between the UK and South Korea. A few lines on, and frenzy erupted: "The fortitude and dynamism of the Conservative host of No 10 Downing Street has been well borne out by the record of his many years at the helm of the United Kingdom."

"More, more," the British delegation was heard to cry over breakfast. They got it. The hack continued: "He led the country effectively in the face of diverse challenges from his critics at home and opponents abroad. The current political and economic stability of the proud nation goes to the credit of his strong leadership."

This was their finest hour.

Thirty-somethings

■ All change at the Group of Thirty, Paul Volcker's favourite think tank; John Walsh has replaced Charles Taylor in the executive director's seat.

The Washington DC-based Group of Thirty is the slimmest of organisations, but punches well above its weight. Under a heavyweight board headed by the former Federal Reserve chairman, it has pitched in on some of the most ponderous issues facing international bankers and finance officials.

The Group's collection of essays on the World Bank and International Monetary Fund became the essential handbook for officials considering the future of the twin Bretton Woods institutions on their 50th anniversary; its study of derivatives law and practice established a virtual industry standard for managing derivatives risk.

Taylor is now going to put that work to good use for consultant Arthur Andersen. Walsh, Taylor's deputy at the group, joined it from Capitol Hill, where he handled international banking issues at the Senate banking committee for Republican Jake Garn. He takes control at a delicate time; The Group is working on ways of handling international bankruptcies, such as last year's Barings collapse.

Magnetic Pole

■ The temptations of fuse-mending and electrical rewiring have oddly proved less than overwhelming for Lech Walesa, Poland's former president. Instead of returning to his former employ as a shipyard electrician in Gdansk – as he announced he would in January – Walesa is following the well-beaten path created by many former international statesmen and women, by setting off on the global lecture trail.

First stop is Scandinavia, where he will lecture a gathering of stock exchange types. Then in April he's off to the US. His lecture title is; "Changes in Europe, the past, the present, the future – through Lech Walesa's eyes". Proceeds will go to the Lech Walesa Institute, set up after last November's presidential elections. The cash-strapped institute aims at uniting Poland's disparate opposition to the ruling coalition of former communists and peasant farmers.

And the shipyard plans? Short-circuited, for the time being, at least.

The Financial Times

100 years ago

The Italian crisis

Rome:- The Chamber was full to overflowing this afternoon, more than 400 deputies being present. Signor Crispi, who was surrounded by all the members of the Government, immediately rose and announced that the Cabinet had given in their resignations to the King, who had accepted them. At these words the whole House sprang to its feet and cheered loudly for fully five minutes. When at last something like silence was obtained, Signore Crispi continued: "But His Majesty has requested us to continue in office for the despatch of current affairs." Loud groans ensued, and when the uproar had somewhat lessened, Signor Crispi, waving his arms towards the Extreme Left, shouted, "Yes, and keep order, too." With a wild yell the members referred to sprang to their feet and hissed and hooted vigorously.

50 years ago

New York listings

I imagine that not many British public companies will be anxious to have their shares listed on the New York market is the same experience awaits them as befell Roan Antelope Copper Mines. The company was required to supply about 20 closely filled pages of information which took two months to compile in New York – Lex.

FINANCIAL TIMES
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Decision to upgrade Tornados aids Eurofighter

UK scraps plan to lease F-16 fighters from US

By Bernard Gray in London

The UK Ministry of Defence has abandoned the idea of leasing US F-16 fighters and will upgrade its existing Tornado fighters to fill a gap until the Eurofighter comes into service.

Its decision consolidates the position of Eurofighter, the next-generation jet being developed by Britain, Italy, Germany and Spain, by removing the threat that the UK could move to a US fighter fleet.

However, it is a blow to Mr David Hart, an adviser to Mr Michael Portillo, the UK defence secretary. Mr Portillo has been strongly challenged in the House of Commons about Mr Hart's role at the MoD in general and on his advice on the F-16 in particular.

An MoD competition between upgrading 100 Tornados and leasing 30 F-16s concluded that sticking with the existing fighter would be far cheaper.

Much of the extra cost of F-16s would have come from the additional support equipment which would have been required. As well as the cost of leasing, the F-16 would have needed different air-to-air refuelling tankers, training equipment and maintainance facilities. During the competition the proposed upgrades to the Tornado were also slimmed down to the minimum to cut costs.

Now British Aerospace will be given a £125m ($193.5m) contract to fit improved electronics to the F3 Tornado fighters which will allow then to carry the latest short and medium range missiles. However, the MoD will not buy additional missiles, and the Royal Air Force will have to use existing air force and Royal Navy stocks.

BAe is already developing large numbers of the new Asraam short-range missile for the RAF, which will be available by the time the first Tornados are upgraded in 1998. However, the Navy, which is the only current user of the Hughes Amraam medium-range missile, only carries a stock of 100 for its F/A-2 Sea Harriers.

Since the UK would only have 100 missiles to arm up to 100 Tornados and 30 Sea Harriers, it would be reliant on the US being prepared to supply more Amraam missiles in any conflict, which could be fitted to the Tornados very quickly.

The need for action came because the fighter version of the Tornado was increasingly falling behind modern aircraft being used elsewhere, and the introduction of the Eurofighter had been delayed several times. The RAF had become uncompetitive, and the UK was embarrassed at its reliance on US air defence cover in the Gulf War and Bosnia.

The Tornado F3, which is fast and has a long range, will now gain the agility it lacks through fitting the highly manoeuvrable missiles.

The RAF had strongly backed upgrading the Tornado as a low-cost way to fill the gap, partly because it was concerned about the threat posed to the Eurofighter programme by a "Trojan Horse" of US fighters being used by the UK. "Once you put in the infrastructure for one squadron of US jets, it is the easiest thing in the world to buy more," said one officer yesterday.

Japan tries to break budget impasse with talks

By Gerard Baker in Tokyo

The Japanese government last night attempted to break the impasse over next year's budget by offering further talks with the main opposition party about a controversial plan to spend public money on bailing out bankrupt housing loan companies.

Representatives of the ruling coalition and the opposition New Frontier party agreed to attempt today to resolve differences over the scheme, which requires the budget to include Y685bn ($6.4bn) of public funds towards liquidation of the companies, known as *jusen*.

The offer of talks followed another day of inconclusive drama in parliament as opposition members continued physically to block entry to the committee chamber where the budget vote was due to have been held on Monday.

The opposition wants the government to cancel the planned public contribution to the scheme and force banks to pay more towards the liquidation of the *jusen*, which have buckled under the weight of their non-performing loans.

The NFP earlier rejected a proposal by the government to increase the apparent burden of the banks in the bailout plan. The coalition said increased restructuring efforts by the nation's big banks would enable them to provide a further Y500bn towards the liquidation over the next seven years.

The extra profits generated by the restructuring would produce higher tax returns, which would partly offset the government's contribution to the scheme, Mr Kazo Watanabe, deputy chief cabinet secretary, claimed.

Under the original scheme, the banks that founded the *jusen* are required to pay Y3,500bn towards their liquidation, along with Y1,700bn from other banks and Y530bn from the other large group of creditors, the nation's agricultural co-operatives.

But the new proposal contained no firm commitment to require the banks to improve profitability. Opposition politicians said it was an attempt to "deceive" the public.

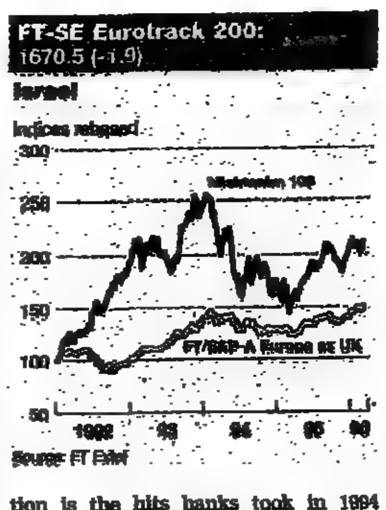
The government wants the spending plans approved by the end of this week, well in advance of the new fiscal year which begins on April 1. But without co-operation from the opposition, that prospect is fast receding.

The two sides will discuss details of the government's latest proposals, which also include a commitment to establish a parliamentary investigation into the causes of the debacle, and a moratorium on finance ministry officials taking up posts in the private sector on retirement.

Mad Hatter enters housing loan fray, Page 6;
Editorial Comment, Page 11

THE LEX COLUMN

Israeli investments



For investors prepared to look past the political turmoil, Israel has attractions. The economy grew by nearly 7 per cent in 1995. This year it is expected to expand by 6 per cent, fuelled by a wave of immigrants and the gradual erosion of the Arab boycott. Inflation is down to single digits and the government's budget deficit for 1996 is estimated at 2.5 per cent of gross domestic product – better than many European countries. Israel is running a big current account deficit, but that is only to be expected as economic growth has been sucking in imports.

Strong fundamentals made Israel one of the best performing emerging markets last year, with a rise of 17 per cent in dollar terms. But with forecast average earnings growth of 18 per cent this year, the stock market is still trading on just 11 times prospective earnings. A weaker shekel should help exports, which make up 30 per cent of profits; and the index is peppered with high-technology electronics and pharmaceutical companies.

In the short term, the market may suffer from the after-shock of the recent bombings. But longer term, the harder line being adopted by Mr Shimon Peres, the prime minister, could help his Labour party win the May election. That would be regarded as positive by international investors, who now account for around 10 per cent of the market's total capitalisation, compared with 1 per cent two years ago. Even allowing for the political risks, the market looks attractive.

CS Holding

CS Holding's 5 per cent profits increase last year is hardly impressive, given that 1994 earnings at the Swiss financial services group were depressed by grim market conditions. At least revenues in all main business areas showed some improvement, which is more than Union Bank of Switzerland managed. But there was a nasty 11 per cent increase in provisions, which appears to reflect more nasty property loans at Swiss Volksbank – an acquisition which has arguably been of greater benefit to competitors, by rationalising the banking market, than to Crédit Suisse itself.

Also disappointing is the 6 per cent rise in commission income – more could have been expected given the strong financial markets last year. Even the 31 per cent increase in trading profits is not impressive; 1994 was an unusually bad year for traders, 1995 an unusually good one. One explanation is the hits banks took in 1994 caused them to reduce risk-taking. The result is that, while the quality of earnings may well have improved, the bounce-back in trading profits is relatively modest. Swiss Bank Corporation, probably the most aggressive of the big three Swiss banks in this context, may prove to have fared better when it reports next week.

While the prospects for the Swiss banking sector may have been improved by rationalisation, slow economic growth continues to cap profits growth. At around 16 times 1995 earnings and with return on equity of around 9 per cent, CS still looks expensive.

UK cable TV

Nynex Cable Communications' share price has risen 20 per cent in the past week, in response to rumours about merger talks with TeleWest. Similarly, Videotron, a UK cable television group quoted in the US, has seen a 25 per cent jump in its stock since it was in effect put up for sale last month. In both cases, the presumption is that somebody will plonk down a huge pot of cash.

Investors should not count on it. The most logical buyers for Nynex and Videotron would be other UK cable groups, as consolidation would cut costs and boost their purchasing power. But because few have cash, any deal is most likely to be an all-stock merger. And if the precedent of last year's merger between TeleWest and SBC Communications is anything to go by, a premium would not be paid. While some rise in Nynex and Videotron's share price would be appropriate under such a scenario to reflect the benefits of consolidation, there should be a similar rise in the purchaser's stock. It would also not be anything like 20-25 per cent.

One cannot rule out the possibility that a big foreign telecoms group will pay cash – aiming to use cable as a platform to compete against BT in telecoms. But of the names bandied about, only KPN of the Netherlands has so far shown interest in UK cable. The others – AT&T and Deutsche Telekom – seem unlikely to be attracted by an industry that is still fragmented and so unsuited for mounting a national telecoms service. Of course, if consolidation does proceed apace that may change.

CRH

CRH, the Irish building materials group, is the white sheep of the sector. Against the trend, it managed to notch up an impressive 38 per cent rise in 1995 profits. Its long-term performance is equally impressive, with compound growth of nearly 20 per cent annually for the last 25 years.

The question is whether this means its fortunes are due for a reversal. The company warned yesterday it was unlikely to repeat last year's profits growth. Extremely favourable conditions in Ireland cannot continue indefinitely, and the US market has probably peaked; these were the largest contributors to profits last year.

But there is still plenty left to go for. Ireland and the US may no longer drive growth, but there is room for an upturn in other markets, such as the UK. Furthermore, the company's formula for success is to boost earnings through a steady stream of smallish acquisitions, financed out of its strong cash flow. Quite simply, it has consistently chosen and managed these acquisitions better than competitors, and that strategy shows no sign of stalling.

The stock's rating, more or less in line with both the sector and the UK stock market, also suggests it is undervalued given its record. This is partly because, although it has a London listing, the fact that it is domiciled in Ireland means it is not considered a "must" for UK fund managers. Given the international profile of the business and the limited exchange rate risk, any discount is likely to be further eroded.

Additional Lex on UK housing, Page 18

Fifa tackled over royalties on footballs

Continued from Page 1

Switzerland is not a member of the European Union.

Fifa said yesterday it could not comment because it had not been informed officially of the Commission's investigation. However, it pointed out that only balls used in international matches had to carry the new Fifa logo. It also said money from the scheme was be used to fund its youth football initiative.

Brussels says the cost of the royalty system, which was introduced at the beginning of this year, adds around SFr8 to the cost of producing and retailing each ball once the necessary tests required for use of the Fifa logo have been completed.

Not all manufacturers, however, are against the scheme. Adidas welcomed the licensing programme and said the price of its footballs had not risen since its introduction.

The Commission's investigation could result in hefty fines if it finds that Fifa has abused its position as an exclusive certifier of high quality footballs.

EU states ordered to pay for breaches of European law

By Robert Rice, James Harding and Deborah Hargreaves in London

European Union states must compensate individuals and companies for losses resulting from government failure to implement EU laws correctly, the European Court of Justice ruled yesterday.

The ruling means the UK government must pay damages to Spanish fishermen banned from British waters in 1989 and Germany must compensate a French brewery prevented from exporting beer to Germany.

Ninety-seven Spanish and Dutch fishermen are suing the UK government for up to £30m ($46.2m) after it legislated in 1988 to close a loophole which allowed foreign trawler owners to circumvent EU fishing quotas by registering their boats under the British flag. In 1991 the act was withdrawn after the Luxembourg court ruled it incompatible with European discrimination laws.

In the German beer case Brasserie du Pécheur, a French brewery, is suing the German government for DM1.8m ($1.22m) after it was forced to stop exporting to Germany between 1981 and 1987 because its beer did not comply with German purity laws. In 1987 the European Court ruled the German law was contrary to European law.

Yesterday's judgments follow from a 1991 landmark decision by the Luxembourg court – in the Francovich case in Italy – in which it ruled that EU states could be forced to compensate people for government breaches of EU law.

The court said states would only have to pay damages if three conditions were met: the EU law breached must confer rights on individuals; the breach must be sufficiently serious; and the damage must have been directly caused by the breach.

An infringement is considered serious if it is "manifest and grave". National courts must decide what is manifest and grave, looking at such factors as whether the EU rule was clear and precise and the measure of discretion left to the state in implementing it.

National courts will also have to decide on the level of damages, although the European Court said they must amount to full compensation for the injury suffered and must be no less than the compensation for similar claims under domestic law.

The court rejected the UK government's argument that damages should be payable only when the breach of EU law was intentional or the state had been negligent.

Argentina senses tougher UK stance, Page 5

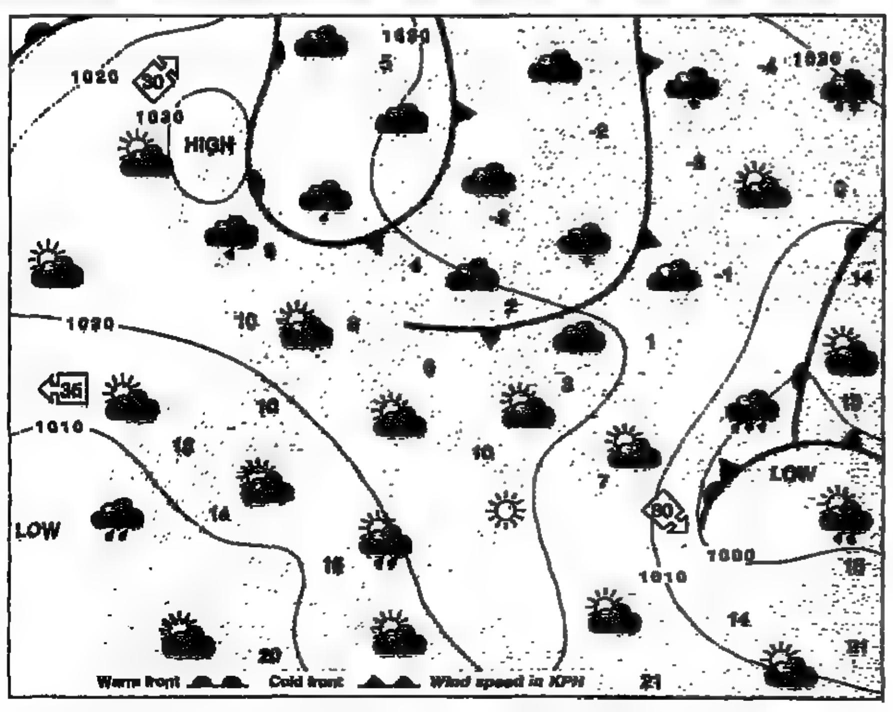
FT WEATHER GUIDE

Europe today

Moist air will be drawn over the North Sea into the Benelux and Germany along the eastern flank of a high pressure area over the British Isles. As a result, cloud will be persistent with patchy drizzle and overnight fog. Northern France will be cloudy but cloud will be scattered further south. After early morning fog, most of the UK will be fair and calm. Western parts of the UK will have sunny intervals, but eastern England will be cloudy with patchy drizzle. The southernmost Iberian peninsula will have plenty of rain but elsewhere it will be dry with frequent sunny intervals. Abundant sun is expected over Italy. Greece will turn dry but rain and high-elevation snow will occur in Turkey.

Five-day forecast

High pressure will shift towards western Russia from tomorrow. Calm conditions over central Europe will change to a drier south-easterly flow. As a result, it will become fair with bright intervals. Temperatures will rise to seasonal levels over western Europe as milder air is transported north. The Baltic states, Poland and Belarus will continue to have light daytime frost. The eastern Mediterranean will become more settled but central regions will continue to have showers.



Situation at 12 GMT. Temperatures maximum for day. Forecasts by Meteo Consult of the Netherlands

TODAY'S TEMPERATURES

	Maximum		Beijing	sun	11	Caracas	fair	30	Faro	rain	16	Madrid	fair	13	Rangoon	fair	33
	Celsius		Belfast	cloudy	7	Cardiff	fair	8	Frankfurt	cloudy	7	Majorca	shower	14	Reykjavik	rain	8
Abu Dhabi	fair	29	Belgrade	cloudy	3	Casablanca	shower	18	Geneva	fair	5	[illegible]	sun	12	Rio	cloudy	29
Accra	cloudy	31	Berlin	drzzl	4	Chicago	snow	-1	Gibraltar	rain	15	Manchester	fair	8	Rome	sun	10
Algiers	cloudy	17	Bermuda	cloudy	10	Cologne	rain	8	Glasgow	fair	9	Manila	cloudy	30	S. Frsco	fair	17
Amsterdam	drzzl	6	Bogota	thund	19	Dakar	cloudy	24	Hamburg	rain	6	Melbourne	fair	31	Seoul	fair	12
Athens	fair	7	Bombay	sun	35	Dallas	fair	26	Helsinki	cloudy	-3	Mexico City	sun	24	Singapore	fair	31
Atlanta	fair	27	Brussels	cloudy	5	Delhi	sun	29	Hong Kong	fair	23	Miami	fair	28	Stockholm	cloudy	0
B Aires	fair	26	Budapest	cloudy	2	Dubai	cloudy	[illegible]	Honolulu	shower	26	Milan	fair	10	Strasbourg	cloudy	8
B.ham	cloudy	7	C'hagen	cloudy	2	Dublin	cloudy	7	Istanbul	rain	3	Montreal	snow	-7	Sydney	cloudy	25
Bangkok	fair	38	Cairo	fair	18	Dubrovnik	fair	9	Jakarta	cloudy	30	Moscow	cloudy	-3	Tangier	shower	17
Barcelona	fair	12	Cape Town	sun	31	Edinburgh	cloudy	9	Jersey	drzzl	7	Munich	cloudy	6	Tel Aviv	rain	18
									Karachi	sun	33	Nairobi	fair	28	Tokyo	fair	10
									Kuwait	fair	24	Naples	sun	10	Toronto	snow	-8
									L Angeles	sun	20	Nassau	shower	28	Vancouver	shower	11
									Las Palmas	fair	21	New York	rain	10	Venice	fair	7
									Lima	cloudy	27	Nice	fair	11	Vienna	rain	3
									Lisbon	fair	15	Nicosia	rain	13	Warsaw	snow	-2
									London	drzzl	8	Oslo	cloudy	3	Washington	shower	19
									Lux.bourg	cloudy	6	Paris	cloudy	9	Wellington	fair	17
									Lyon	cloudy	6	Perth	sun	29	Winnipeg	sun	-14
									Madeira	shower	17	Prague	cloudy	2	Zurich	fair	6

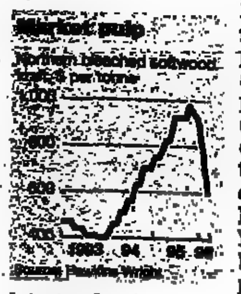
FINANCIAL TIMES
COMPANIES & MARKETS
Wednesday March 6 1996

IN BRIEF

Lotus in talks with potential buyers

Lotus, the UK engineering company best known for its sports cars, confirmed it was talking to potential buyers, but denied it had been sold to Daewoo, the acquisitive Korean industrial group. Page 14

North American pulp mills slash kraft price



North American wood pulp mills have again slashed prices amid recriminations among producers over the pulp market's recent decline. Weyerhaeuser, one of the biggest producers, set the ball rolling last week by cutting the list price of Northern Bleached Softwood Kraft (NBSK), the industry's benchmark product, by 17 per cent to $600 a tonne. The latest reduction comes just a month after a similar cut. Page 19

Belgian bank to stand alone

Générale de Banque, Belgium's largest bank, said its philosophy remained to be a "stand-alone" organisation, despite recent calls from ministers for large Belgian banks to merge and form a "mega-bank", and speculation that it was considering a merger with Banque Bruxelles Lambert, the fourth biggest bank. Page 14

Haeco downbeat for 1996 after 20% slide

Hong Kong Aircraft Engineering Company (Haeco), a listed subsidiary of the Swire group, announced a 20 per cent fall in net profits to HK$331.3m (US$42.9m) for 1995 and warned of further difficulties and a fall in margins this year. Page 16

WR Grace snubs Hercules merger offer

Shares in WR Grace, the embattled US chemicals company, jumped 11 per cent on news that it had rejected a merger approach from Hercules, a fellow US speciality chemicals producer. Page 17

High stakes in WordPerfect partnership

Corel, which bought WordPerfect, the word processing software maker, in January from Novell, the networking software specialist, is eager to show that the deal has the makings of an exciting and rewarding partnership. The Canadian software maker's efforts underscore the high stakes riding on its new acquisition, both for WordPerfect and itself. Page 17

Emap nears deal to buy French magazines

Emap, the UK publishing and media group, is close to purchasing three leading French consumer magazines from Compagnie Luxembourgeoise de Telediffusion for £145m ($223m). Page 18

M&S to sell Canadian stores chain

Marks and Spencer, the UK retailer, is to sell its chain of 85 D'Allaird's stores in Canada to Comark, one of the country's largest speciality retailers. Page 18

Companies in this issue

Market Statistics

Chief price changes yesterday

FRANKFURT (DM)			
Rises			
Adca Prf	700	+	35
VEW	504.5	+	9.5
Falls			
Adidas	94.5	–	4.6
DLW	137	–	7
Herlitz	189.5	–	9.5
Lufthansa	229.8	–	5.2
NEW YORK ($)			
Rises			
Armstrong Wrld	61½	+	2¼
Borders	28⅜	+	2⅜
Culbro	75⅛	+	3⅛
Grace WR	76⅞	+	8¼
Sterling Sftwr	69¾	+	2⅞
Falls			
Millipore	39	–	4⅛
LONDON (Pence)			
Rises			
Brit Biotech	2320	+	272
Inveresk	153	+	23
Metal Bulletin	773	+	80
Pegasus	235	+	25
Proudfoot	39	+	6
Falls			
Pacer Systems	125	–	15
TORONTO (C$)			
Rises			
Golden Star	12⅜	+	1⅜
Guyanor Res B	8¼	+	1⅛
Falls			
AT Adv Info	11½	–	1¼
Gearnet Comm	18	–	1⅛
Slater Inds	13⅛	–	⅞
Softkey Sftwr	32⅛	–	2⅞
PARIS (FFr)			
Rises			
Dassault	4280	+	227
Legris	245	+	10
Falls			
Interbail	276	–	6.5
Seb SA	710	–	18
UAP	115.5	–	4.5
Valeo	259.8	–	9
TOKYO (Yen)			
Rises			
Denny's Japan	3480	+	130
Nachi Fujikoshi	489	+	29
Nippon Shinpan	762	+	35
Shionogi	880	+	38
Falls			
Fanuc	4300	–	130
Kyokuru	843	–	37
HONG KONG (HK$)			
Rises			
Furama Hotel	12.4	+	0.85
Tai Cheung	7.5	+	0.55
Wing On Intl	14.7	+	0.7
YGM Trading	6.5	+	0.5
Falls			
Hong Hing Print	2.125	–	0.125
S'pore HK Prop	1.74	–	0.1
BANGKOK (Baht)			
Rises			
Thai Packaging	19.5	+	1.75
Thai Union Fr	33.25	+	3
Falls			
Interlife	49.5	–	5.5
Intl B'cast	45.5	–	5
Seafresh Inds	95	–	10
Prantis Jewelry	45.5	–	5

New York and Toronto prices at 12:30.

RJR lifts dividend to woo investors

Tobacco and food group to fight raiders' break-up proposals with $100m buy-back

By Richard Tomkins in New York

RJR Nabisco, the US tobacco and food group fighting efforts to force it into a break-up, yesterday tried to win back shareholders' allegiance by announcing a 23 per cent increase in its dividend and a $100m share repurchase programme.

The strategy carries risks because it will soak up RJR Nabisco's scarce cash resources, but the big US credit rating agencies yesterday backed off from threats to downgrade the company's debt to junk bond status, saying any action hinged on the outcome of a shareholder dispute.

Two weeks ago Mr Bennett LeBow and Mr Carl Icahn, the US corporate raiders pressing RJR Nabisco to spin off its food business, claimed victory in the first round of their battle by announcing that a shareholder vote had produced a narrow majority in favour of their proposal.

RJR Nabisco is checking the figures, but it has vowed not to press ahead with a spin-off even if the vote is confirmed. It says an immediate spin-off would be blocked by anti-tobacco plaintiffs with litigation pending against the company.

Yesterday, RJR Nabisco tried to appease shareholders by promising that the Nabisco food business would be spun off "at the earliest possible time". In the meantime, it said, the board had decided to return a greater share of the company's free cash flows to shareholders by lifting the quarterly dividend from $0.375 a share to $0.4625.

The company also committed itself to buying back about 10m of its common shares over the next few years, starting with $100m worth of stock this year. It currently has 272m shares outstanding, or 330m fully diluted.

The company also announced the formation of a new board committee consisting entirely of outside directors to oversee corporate governance and to take responsibility for nominating new directors.

The dividend and share buy-back moves recall measures taken by Philip Morris, the biggest US tobacco and food group, when it backed away from a break-up in 1994. Philip Morris increased its dividend by 19.6 per cent and started a $6bn share buy-back.

Unlike Philip Morris, however, RJR Nabisco is weighed down with about $10bn of debt – a hangover from Kohlberg Kravis Roberts's $25bn leveraged buy-out in 1989.

Last week Standard & Poor's, the US credit rating agency, warned that further pressures on the company's "limited financial flexibility" would risk a lowering of its debt rating.

Mr Steven Goldstone, RJR Nabisco's chief executive, said yesterday that the company's "improving outlook" made him confident that the policies were sustainable.

Kmart set to raise $118m in Czech sale

By Vincent Boland in Prague, Richard Tomkins in New York and Roderick Oram in London

Kmart, the troubled US discount store group, looks set to raise a badly-needed $117.5m by selling its 13 stores in the Czech and Slovak republics to Tesco, one of the biggest UK retailers.

The proposed sale, expected to be completed in April, marks the end of Kmart's only venture into Europe. It bought the stores from the then Czechoslovakian government in 1992, spending an estimated $120m on acquiring and renovating the chain.

Kmart, which operates more than 2,000 discount superstores in the US, is the world's second biggest retailer, but it has been suffering acute financial difficulties because of its failure to compete with Wal-Mart and other, more successful, US discount store groups in its home market.

After 11 quarters of poor earnings, its stock has plummeted, its debt has been downgraded to junk bond status and it has been struggling to stay out of chapter 11 bankruptcy protection by selling non-core assets and renegotiating its loans.

Mr Floyd Hall, who took over as chairman and chief executive last year, said the Czech and Slovak stores had enjoyed solid sales increases and were expected to show a profit for the year to January 1996. "However, the sale of these businesses is in keeping with our determination to focus our energies and resources on our core operations in the US and North America."

"Longer term, we expect that there will be greater international growth opportunities for Kmart in Mexico, Central and South America," he said. Kmart's international operations include stores in Canada, Guam, Puerto Rico and the US Virgin Islands, plus joint ventures in Mexico and Singapore.

For Tesco, the purchase "completes the geographic jigsaw for us in central Europe", said Mr David Wild, the UK group's European corporate development director. In November 1994, it paid £8m ($12m) for a Polish store chain and a year later it bought a group in Hungary for £15m.

The latest acquisition, among the biggest UK direct investments to date in the two countries, will give Tesco six department stores in the Czech Republic and seven in Slovakia.

The purchase is expected to be finalised next month.

CS Holding beats rival but fails to impress investors

Swiss bank disappoints with 5% income rise

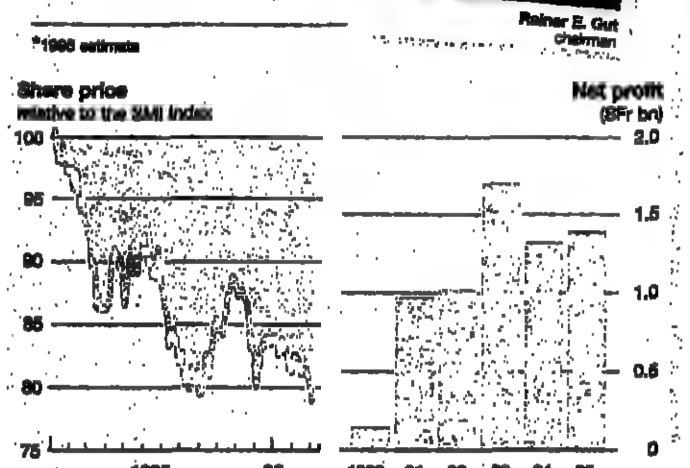
By Ian Rodger in Zurich

COMPANY PROFILE: **CS Holding**

Market capitalisation	SFr 21.2bn
Main listing	Zurich
Historic P/E	14.74
Gross yield	3.13%
Earnings per share	SFr7.99*
Current share price	SFr112.5

*1995 estimate

Rainer E. Gut
chairman



Source: FT Extel

CS Holding, the financial services group built around Credit Suisse, yesterday posted a 5 per cent rise in 1994 net income to SFr1.4bn ($1.2bn).

This was below many investors' expectations but slightly better than the 3.8 per cent rise reported by rival Union Bank of Switzerland two weeks ago. Earnings per share were down 2.6 per cent, to SFr7.59, because of an 8.2 per cent rise in the average number of shares outstanding.

The shares fell SFr2.5 to SFr112.5 on the Swiss stock market. Analysts said it was difficult to discern underlying business trends because of a number of exceptional items.

In 1994, the group's net income was lifted by the sale of a 20 per cent stake in its derivatives subsidiary for SFr540m. The 1995 operating income was helped by changes in accounting practices and the release of SFr575m in retained earnings to cover bad loans at Swiss Volksbank, a subsidiary.

Mr Hans Kaufmann, banking analyst at Bank Julius Baer in Zurich, complained of "accounting gimmicks" and wondered whether the group should be assigned a higher risk premium over UBS.

Group net interest income rose 6 per cent, to SFr3.26bn, but provisions rose 11 per cent, to SFr2.6bn. This reflected the "persistently difficult situation" in the Swiss property market, the slow growth of the Swiss economy and the need for further aid to Volksbank. Commission income was also up 6 per cent, to SFr4.13bn, although the result was flattered by first-time consolidated contributions from the Credis investment funds subsidiary and Neue Aargauer Bank.

Trading income jumped 21 per cent, to SFr2.99bn, and other income remained a still high SFr1.14bn, thanks to the released retained earnings.

Total operating income advanced 5 per cent, to SFr11.66bn, while operating expenses fell 1 per cent to SFr6.95bn, leaving profit before taxes and provisions up 14 per cent at SFr4.71bn.

Pre-tax profit of the group's flagship bank, Credit Suisse, soared 40 per cent, to SFr1.86bn, and Volksbank achieved net income of SFr163m after restructuring. Net income of Credit Suisse Financial Products, the derivatives subsidiary, fell 11 per cent to SFr298m because of the strong Swiss franc.

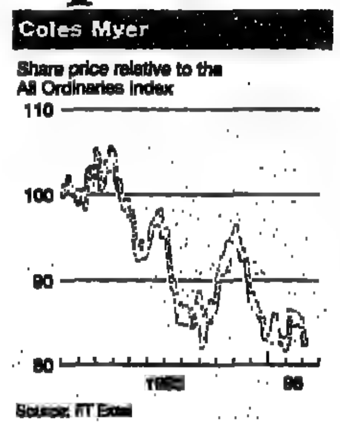
CS First Boston, the US investment bank, lifted net income by a third to $207m after restructuring. Both the private bank subsidiaries and CS Life made higher contributions.

Lex, Page 12

Coles Myer rejects proposal to break up

By Nikki Tait in Sydney

Coles Myer



Source: FT Extel

Coles Myer, Australia's biggest retailer, said yesterday it had decided against pursuing any further the idea of breaking up into separately-listed operating units.

Instead, it would concentrate on "the current strategy of co-ordinating and integrating Coles Myer's core retail brands". Mr Nobby Clark, Coles's new chairman, described the approach as "low-risk" and "well-defined", with "significant potential of increasing shareholder value".

The board, he said, was "satisfied that management projections of the bottom-line benefits are realistic and sustainable".

The plan to break up the group was mooted by Mr Solomon Lew, Coles's former chairman, when he was fighting institutional shareholders over the group's corporate governance standards. The battle – which along with concerns over profits growth has helped to depress the share price – ended late last year. New non-executive directors were appointed to the board, and Mr Clark, a former National Australia Bank chief, was installed as non-executive chairman. Mr Lew, who is Coles's biggest single shareholder, remained on the board.

Institutional investors tended to dismiss Mr Lew's break-up suggestion as a diversionary tactic, although they said they were happy to have the idea investigated.

The break-up plan had been examined by three advisers – Smith Barney, Macquarie Bank, and KPMG Corporate Finance. Mr Peter Bartels, Coles's chief executive, declined to detail their findings, or to say whether the three firms had come up with similar conclusions.

However, he said the board's decision was in favour of the option which would maximise shareholder value.

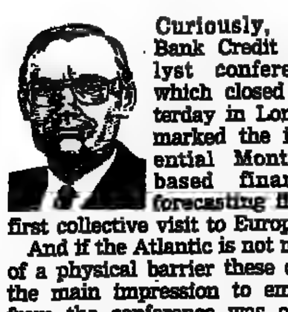
Coles stressed that it would continue to divest non-core assets. It said it was retaining KPMG and Macquarie Bank to advise on its remaining property portfolio. More than A$650m-worth (US$500m) of property assets have been sold in the past 18 months.

The existing restructuring programme has involved refocusing the company's brands and a better integration of services to eliminate duplication and cut costs.

Coles has outsourced a number of group functions – such as vehicle leasing. Mr Bartels suggested the group might have more to say on further cost-savings when it announces interim profits this month.

Barry Riley

New World spurns the Old World's last stand



Curiously, the Bank Credit Analyst conference, which closed yesterday in London, marked the influential Montreal-based financial forecasting firm's first collective visit to Europe.

And if the Atlantic is not much of a physical barrier these days, the main impression to emerge from the conference was of an extraordinary gulf of mutual incomprehension between investors in the US and Europe.

Europeans are suspicious of the claimed corporate sector miracle in the US, and remain convinced Wall Street's amazing bull market represents a dangerous trap that must end in disaster.

As for North Americans, they regard Europe as a kind of industrial museum which threatens to become a basket case. They cannot understand why such enormous political and financial resources are being expended upon Economic and Monetary Union, which instead of being a marginal exercise in efficiency and integration threatens to become seriously disruptive.

At the very least, it is distracting attention from the problems of improving competitiveness and cutting unemployment. At worst it may undermine the European Union: a case of fiddling while the Treaty of Rome burns.

I have spelt out the underexposure of European investors to Wall Street several times. UK pension funds, for example, have only 18 per cent of their overseas equity portfolios in the US, whereas Wall Street represents about 48 per cent of the World Ex UK Index. The opportunity cost of this underweighting over the past year has been high.

Europe's anti-US prejudices have several origins. The US, with its low savings and permanent trade deficit, has been considered financially unsound; its politics, with government shutdowns and weird fringe pundits running for president, appear bizarre; its volatile industries can seem, to stuffy Europeans, to be based on Mcjobs and candyfloss.

> North Americans regard Europe as an industrial museum

Will Wall Street indeed crash? The BCA editors had some comfort in the short term for the European audience. The US stock market has become highly speculative and is vulnerable to a likely acceleration of economic growth during the next two or three quarters. The long bond yield could rise to 7 per cent and Wall Street is likely to tumble by 10-20 per cent.

However, that would be a buying opportunity, they say. The US economy is on a long-wave expansion. The Wall Street uptrend, which began in 1982, could run another eight or 10 years. Europeans must accept this last chance to get on board.

The BCA view on continental Europe, however, was that countries such as France and Germany were lagging many years behind the US, by trying to resist the "creative destruction" required by the long cycle.

As for Emu, Mr Bernard Connolly, ejected from the Brussels bureaucracy last year for betrayal by writing his book *The Rotten Heart of Europe*, turned up to continue the attack. He portrayed Emu as the "bureaucrats' last stand", an attempt to recreate the *dirigiste* golden age of the 1950s and 1960s and exclude the disruptive influence of the Asians and Americans, while politicians were encouraged to dream of the fame they would gain for making possible eternal peace.

None of this was calculated to restore the enthusiasm of American investors, especially as Mr Connolly accepted that, despite the controversy and the missed convergence targets, Emu was more likely to happen than not. Even over-indebted Belgium would be allowed in, perhaps with a six-month delay as a "bone for the Bundesbank".

This was all good knockabout stuff. Yet the curious point is that for all the differences between the US and Europe, 10-year bond yields are very similar at 6.3 per cent in Germany and 6.0 per cent in the US.

Europeans might argue the margin in favour of the US reflects trade deficit recycling by Asian central banks. Americans might say the D-Mark has lost status because it will be merged into a potentially soft euro. But there is not a great deal in it.

In terms of equities, however, the European markets have trailed Wall Street by 18 per cent since the beginning of 1995. The world may be becoming smaller, but the Atlantic is getting wider.

Eni's estimated results in line with forecasts

By John Simkins in Milan

The dog with six legs – the emblem of Eni, the Italian oil, gas and chemicals group – again raced ahead in 1995 and has not disappointed its new backers.

The government floated 15 per cent of the group, which is among the world's eight leading quoted oil companies, last November and shareholders will be offered a reward in the form of a dividend pay-out totalling at least 40 per cent of estimated 1995 net profits of L4,300bn ($2.77bn).

The estimated consolidated results, released late on Monday, were in line with expectations – net profits were up 33 per cent – and follow a strong performance in 1994.

Restructuring under Mr Franco Bernabè, managing director, has involved concentrating on exploration, production, refining and distribution and the sale of former loss-making non-core activities.

The bulk of these disposals last year took place in the petrochemicals sector, where operating income rose by L1,600bn to L1,950bn. Enichem, the chemicals subsidiary, will return to profit this year after incurring a L657bn net loss in 1994.

Mr Alan Marshall, oil analyst at Robert Fleming Securities, the UK stockbroker, said he expected Eni's share price – which closed last night L67 higher at L6,007, after touching a high of L6,050 – to outperform the Italian market this year. Eni's issue price last year, fixed at the bottom end of the range during difficult market conditions, was L5,250.

Mr Marshall said he had a 12 months target for the share price of L6,700. He said: "At under 12 times earnings per share in 1995 and under four times cash flow per share, it looks quite cheap both against the market as a whole and the oil and gas sector.

"The company is still running quite a lot of debt, and oil and gas companies are not usually highly geared."

Net debt was reduced by L6,000bn to L17,800bn, bringing the net debt to equity ratio, including minority interests, to 0.7 compared with 1.1 in 1994.

Exploration and production, which is conducted by Agip, boosted operating income by 8 per cent to about L4,000bn, partly because of higher oil prices. Natural gas supply, in which the main division is Snam, increased operating income by 5 per cent to L3,250bn. Italy imports two-thirds of its natural gas consumption to conserve domestic reserves, with Eni buying from Algeria, Russia and the Netherlands.

Besides completing its disposals, Eni will upgrade its Agip Petroli service station network. A further sale of shares will depend on market conditions and a decision by the government. The Treasury controls a golden share which prevents shareholders from taking more than 3 per cent without its permission.

Belgian bank to 'stand alone'

By Neil Buckley in Brussels

Générale de Banque, Belgium's largest bank, said yesterday its philosophy remained to be a "stand-alone" organisation, despite recent calls from ministers for large Belgian banks to merge and form a "megabank", and speculation that it was considering a merger with Banque Bruxelles Lambert, the fourth biggest bank.

The statement came as the bank announced an 3.1 per cent increase in 1995 net profit to BFr13.7bn ($451.7m), although provisions, write-downs and depreciation increased 27 per cent to BFr20.2bn, partly due to provisions on loans to Eurotunnel, the Channel tunnel operator.

Asked if Générale de Banque would consider merging with other Belgian groups, Mr Ferdinand Chaffart, chief executive, said: "It is clear that our basic philosophy is a philosophy of stand-alone." However, he added, "other possibilities" would never be ruled out.

His comments followed a call in January by Mr Philippe Maystadt, the Belgian finance minister, supported by Mr Elio Di Rupo, economics minister, for the creation of a Belgian banking group that was large enough to compete in the international market.

Their statements were echoed by Mr Etienne Davignon, chairman of Société Générale de Belgique, which holds 30 per cent of Générale de Banque, who said the bank should look for links that would add value and improve competitiveness.

Mr Davignon told a Belgian newspaper he did "not exclude a merger of Générale de Banque with other Belgian banks".

Mr Chaffart said yesterday Générale de Banque had already made great strides in its attempts to develop from "a Belgian bank with branches abroad into a European bank with its roots in Belgium".

The proportion of net profit coming from outside Belgium was expected to increase from 40 per cent in 1995 to about 60 per cent this year.

Last year the bank acquired Crédit Lyonnais Nederland, the Dutch subsidiary of the French state-owned bank, for BFr21.5bn, giving it a foothold in the Dutch market. It also acquired 73 per cent of Fimagest, France's eighth-largest asset management company, for FFr660m ($131.8m).

Mr Chaffart said the bank was still seeking acquisitions, although a rights issue might be required to raise funds.

Générale de Banque's gross income increased 5.6 per cent to BFr113.4bn, with interest income up 1 per cent, and non-interest income up 15.3 per cent, despite the slowdown in economic growth which Mr Chaffart said had produced only a slight increase in loan demand in most European countries last year.

General expenses increased 2.5 per cent to BFr68bn. The bank proposes to increase its net dividend on ordinary shares from BFr380 to BFr385.

Fielmann disappoints the market

By William Cochrane

On Monday, Fielmann joined the growing list of busted German growth stocks. Europe's biggest leading optical chain may have revealed a 43 per cent leap in 1995 profits, but it then forecast a mere 5 per cent gain in the current year, blaming increased marketing costs.

The preference shares, which had rocketed by more than 70 per cent during the past 12 months, immediately came back DM13.30, or 15.7 per cent, to DM70.80, and fell another DM1.90 yesterday to DM68.90, a 2.7 per cent drop.

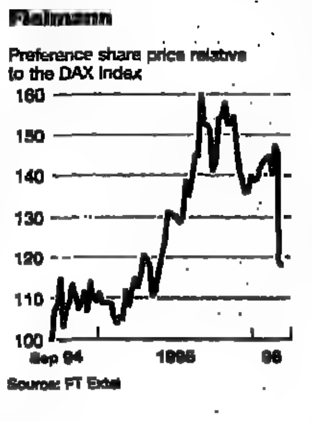
The optical group joined a dejected trail of recent disappointments: Escom, the computer group; Hornbach, the do-it-yourself company; and Wella, the hair care group, were among the investment selections when growth stocks became fashionable last year.

Traditionally, investors in the German market have preferred big cyclicals, like the automotive groups and chemicals, or the defensive qualities of its financial and utilities sectors.

Fielmann's attraction was its combination of international purchasing power and vertical integration. The group is a spectacle frame manufacturer, retailer, engineer and ophthalmic optician.

The company had been producing double-digit sales and earnings growth in recent years, and some analysts were going for annual sales growth close to the 20 per cent mark

Fielmann



Source: FT Extel

over the next three to five years.

In Germany, the argument went, 37m people wear spectacles. Fielmann produces the least expensive spectacles on the market, generating its growth through high volume.

The volume was available because almost 70 per cent of Germans in the 45 to 59 age group were wearers; that applied to nearly 100 per cent of senior citizens; and with the age pyramid for Germany becoming increasingly heavy, there were indications that there was further scope for the market to expand.

These opportunities still exist. But, says Mr Stephan Muelheim at brokers Dillon Read, stocks in and around the retailing sector have had to battle with depressed German consumption over the past two years: department stores, for example, sadly outperformed the Dax index last year with a rise of just 0.1 per cent, following a 15.1 per cent fall in 1994.

Bayerische Vereinsbank lifts payout after late surge

By Peter Norman in Bonn

Bayerische Vereinsbank, the Munich-based bank, yesterday increased its dividend for 1995 after strong growth in group profits in the second half of last year.

The bank, which last year changed the nominal value of its shares to DM5 from DM50, will pay DM1.5 per DM5 nominal share against DM14.5 per DM50 share the previous year.

Group net profit increased 16.3 per cent, from DM565m in 1994 to DM657m ($445m), while operating profit after loan loss provisions rose 29.9 per cent, from DM1.06bn to DM1.38bn.

Joining a slowly growing trend among large German companies to greater transparency in financial reporting, the bank said its annual report, due on March 21, would give some important group results according to International Accounting Standards.

Yesterday's figures pointed to a strong recovery in second half profits. The bank earlier reported that its operating profit at the end of June was 6.6 per cent less than half the operating profit reported for 1994. Using the same method of comparison, operating profits at the end of September were 5.3 per cent up on three quarters of the previous year's result.

The company said the recovery reflected a strong performance by group members, particularly Vereinsbank's mortgage bank subsidiary. The group's stock of mortgage lending increased 15 per cent to DM107bn. There was also a sharp increase in net profit from trading on the bank's own account, from DM7m in 1994 to DM270m. In 1993, the group earned DM318m from own-account trading.

Profits last year were also helped by a 24 per cent drop in loan loss provisions, from DM949m to DM721m. The group's interest surplus increased 2.7 per cent to DM4.43bn, while commission income dropped 2.3 per cent to DM1.06bn. Running costs increased 6 per cent to DM3.66bn but this included substantial investment in Germany and abroad.

The bank said the rate of cost increases was halved last year from 1994, when outlays had jumped from DM3.08bn in 1993 to DM3.46bn.

The group balance sheet total rose 12.1 per cent last year to DM357bn.

Haig Simonian talks to manufacturers at the Geneva Motor Show, which opened yesterday

Audi upbeat about demand for new models

Audi, the executive cars subsidiary of Germany's Volkswagen group, expects another strong year in 1996 on the back of new models and continuing strong demand for its highly-popular A4 saloon.

Mr Herbert Demel, chairman, said in an interview that the company "hoped to repeat the success of 1995", this year. Audi's full results will not be published until April. However, analysts expect pre-tax profits to exceed DM400m ($271m), compared with DM189m in 1994.

Profits before tax in the first half of last year jumped to DM250m, while sales for the full year climbed almost 20 per cent to more than 447,000 units, buoyed by the A4.

Audi built about 260,000 A4s and 30,000 of the previous Audi 80 model in 1995. Mr Demel said sales this year were expected to remain stable, in spite of the introduction of an entirely new car, the smaller A3, which is expected to attract at least 25,000 potential A4 buyers in a full year.

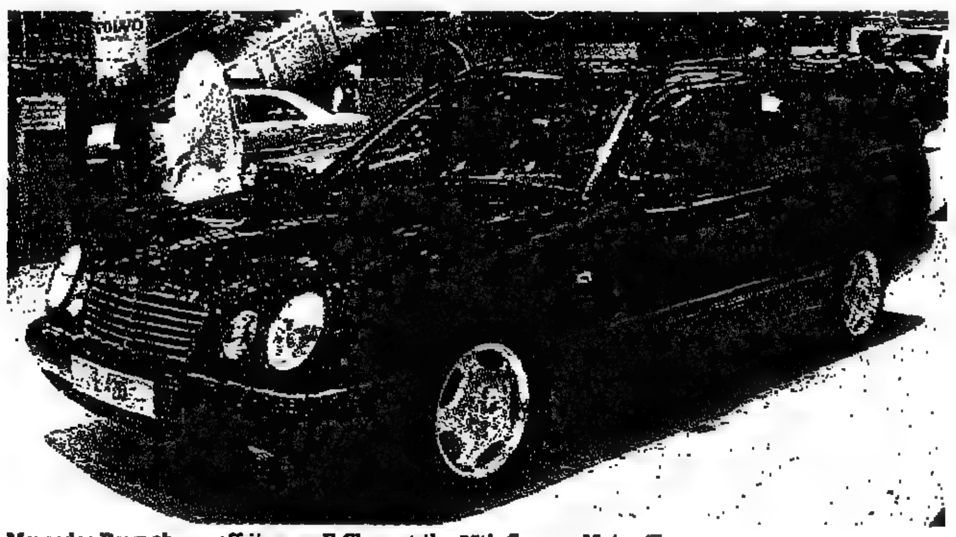
The new model, a three-door hatchback built on the platform of VW's next generation Golf model, due next year, would go on sale in the autumn. Mr Demel declined to give a sales target, but said Audi had the capacity to build up to 100,000 units a year.

Sales would start with a range of medium-priced vehicles, including a 125 hp mid-range model and a 90 hp diesel. A high-performance 150 hp turbocharged version would follow.

The A3 marks a further step in Audi's drive to broaden its range and capture younger motorists. Mr Demel said the introduction of convertibles, coupés and station wagons had already lowered the average age of owners to about 48.

The appeal to the "young in spirit", reinforced by the A3, should be accelerated by the new aluminium TT convertible and coupé, unveiled last year. Audi expects to build about 20,000 coupés a year, with sales starting in 1998. Sales of the convertible, expected to be launched in 1999, should reach about 10,000 units annually.

The new cars will continue Audi's innovative use of aluminium for some of its vehicles. Mr Demel confirmed that parts of its next-generation A6 saloon would be aluminium.



Mercedes Benz shows off its new E-Class at the 66th Geneva Motor Show Picture: AP

■ The Peugeot chairman, Mr Jacques Calvet, said he expected the French car market to grow 1 per cent in 1996. In December, Mr Calvet had seen flat growth for the market this year. He reiterated an earlier forecast that the European car market would grow by between 2 per cent and 2.5 per cent this year. His European forecast agreed with that of Mr Louis Schweitzer, Renault's chairman. Mr Calvet said that in France, after a calamitous December, sales had rebounded in January and February. He said that because of currency factors, manufacturers in Italy, Spain and the UK had a considerable advantage over French and German groups. *AFX News, Geneva*

■ Mr Calvet warned that Peugeot would stop buying from Valeo, the French components group, if the car parts company were taken over by a group that he considered detrimental to the French carmaker's interests. "If it [the buyer] did not please me, I would progressively halt my purchases from Valeo," Mr Calvet said. He said he did not want Valeo controlled by a carmaker – or a components group under the control of a carmaker or a supplier – which would subsequently win a monopoly position. *Reuter, Geneva*

■ Mr Helmut Werner, chairman of Mercedes-Benz, said the German carmaker's 1996 results would be at least as good as the DM2bn-plus figure it achieved in 1995. In 1994, Mercedes generated a profit of DM1.85bn. The Mercedes chairman also said the company as a whole was making a return on capital of about 12 per cent. Parts of the company were at more than 30 per cent.

Mr Werner said production of the E-class cars had reached capacity after strong demand for the car at he start of this year. He said January domestic car sales had climbed 15 per cent, with US car sales up 26 per cent and Japanese car sales up 21 per cent from a year earlier. Mr Werner was speaking at a dinner to launch Mercedes' E and C class estate models and V class family bus. *Reuter and AFX News, Geneva*

■ General Motors (Europe) 1995 net profit rose 14.5 per cent from $695m to $796m a year earlier, Mr Louis Hughes, General Motors vice-chairman, said. *AFX News, Geneva*

Lotus confirms takeover talks

Lotus, the UK engineering company best known for its sleek sports cars, is talking to potential buyers. However, yesterday it denied it had already been sold to Daewoo, the acquisitive Korean industrial group.

"The shareholders have decided to allow other parties the opportunity to participate through investment . . . to strengthen the company structure," the company said.

All questions about potential investors were referred to a prepared statement, which said: "The negotiations do not involve financial organisations, but industrial companies with strong financial resources to carry out their own programmes in conjunction with those of Lotus to take advantage of synergies."

Lotus did not deny it was talking to Daewoo. However, Mr Neeraj Kapur, the UK company's finance director, said reports of a sale were "completely 100 per cent incorrect".

The long-term future of Lotus, which has about 1,000 staff at its base near Norwich, has been put in doubt because of the financial difficulties of Mr Romano Artioli, its owner.

His problems came to a head when a court in Modena, Italy declared Bugatti Automobili insolvent last year. Mr Artioli re-established Bugatti to build highly-expensive "supercars" in the early 1990s and bought Lotus from General Motors two years ago.

Bugatti's financial plight triggered speculation of possible side-effects for Lotus. However, the UK company has maintained it is unaffected by the court action.

The impact of the Bugatti bankruptcy – and the ultimate ownership of Lotus, as well as its relationship with Mr Artioli's other activities – was thrown into confusion yesterday.

Following the court action, Mr Artioli's lawyers appear to have conducted various legal moves to ensure Lotus's isolation from Bugatti and its Luxembourg-based holding company (which was also believed to control Lotus).

The company says there is strong demand for its cars and engineering services. Net earnings rose to £5.8m ($8.9m) last year from £3.6m, while sales climbed by more than 20 per cent to £65m from £54m.

Mr Kapur said Lotus needed extra capital to finance its engineering and carmaking activities. Engineering, which has always been the most attractive side of the business for potential suitors, has recently invested in new test facilities and has a long order book.

Any sale to a big carmaker could compromise its independence to solicit business from other car companies, raising doubts about the likelihood of a sale to Daewoo.

EUROPEAN NEWS DIGEST

Veba and Metro in digital TV venture

Two of Europe's largest companies, Veba of Germany and the Swiss retail group Metro, yesterday said they would join forces to introduce digital television in Germany, putting paid to painstaking efforts to ensure a common digital television standard in Germany, Europe's largest market.

The Veba/Metro alliance will be pitted against another consortia of German companies, including the state-owned telecoms operator Deutsche Telekom and the media group Bertelsmann, which last year created a rival consortium, Multimedia Betriebsgesellschaft (MMBG), in which Veba was supposed to take a stake.

News of the alliance is a significant success for Mr Leo Kirch, the German media mogul who had been at loggerheads with the MMBG consortium on the question of which decoder should be used to access digital television services such as video on demand and home shopping. Veba and Metro yesterday said they would use a decoder launched by Mr Kirch last year, known as the d-box, and not MMBG's rival technology. All of the German companies involved in digital television appeared to have reached preliminary agreement on a single standard in December.

The rival MMBG consortium also includes ARD and ZDF, the two German public-sector television channels and Canal Plus, the French pay-TV channel partly owned by Bertelsmann. The Veba/Metro alliance said it would start its first field trials in coming months and expected to introduce a full range of digital television services not later than September 1. *Michael Lindemann, Bonn*

Portucel ahead five-fold

A cyclical rise in pulp prices helped Portucel-Industrial, the world's second largest producer of bleached eucalyptus pulp, lift net consolidated profit almost fivefold to Es18.1bn ($118m) in 1995 from Es3.2bn in 1994. The strong performance was driven by a sharp rise in pulp prices, which peaked in the third quarter of 1995. But analysts forecast a fall in the group's earnings this year due to an earlier-than-expected downturn in the pulp cycle.

Portugal's new socialist government plans to continue the privatisation of Portucel-I in 1997 following a restructuring of the country's pulp and paper sector. It is expected to announce plans for some form of merger or association between Portucel-I, Soporcel, Portugal's second-largest pulp and paper producer, and Inapa, a paper manufacturer, which are all directly or indirectly controlled by the state. An initial public offer of 40 per cent of Portucel-I raised Es35.65bn last June.

Sales rose 34 per cent to Es70.5bn from Es52.5bn in 1994, the group said. Exports, mainly to western Europe, represented 66 per cent of the total. Net cash flow climbed 150 per cent to Es25bn. Portucel will pay a 1995 dividend of Es45 a share, representing a dividend yield of 5.1 per cent. The company said it was setting aside Es1.85bn to ensure a similar level of payments in years when profits were hit by cyclical downturns. *Peter Wise, Lisbon*

DG Bank bounces back

DG Bank Deutsche Genossenschaftsbank, the umbrella organisation of Germany's co-operative banks, bounced back to normality after a crisis in the early 1990s. It reported an 18.8 per cent increase in 1995 operating profits to DM553m ($348m) before risk provisions, and a rise in the interest surplus by 5.3 per cent to DM1.18bn. DG Bank has decided to resume dividend payments to its owners, a decision which Mr Bernd Thiemann, chairman, described as an "important signal". DG Bank's financing operations increased income by 8.7 per cent to DM165.3m. After taking out individual and country risks operating profits were DM345.6m after a loss of DM214m in 1994. *Wolfgang Münchau, Frankfurt*

Elektrowatt rises to SFr178m

Elektrowatt, the Swiss electricity and engineering group, posted net profits after minorities up from SFr172m to SFr178m ($148m) for the year to the end-September. Operating profits rose from SFr469m to SFr489m on sales up from SFr4.94bn to SFr4.98bn. Earnings per share fell from SFr21.60 to SFr20.60. The group expected a further improvement in sales and operating profits in the year to Sept 1996. Elektrowatt said in January it would propose an unchanged SFr11.50 dividend. *AFX News, Zurich*

Fokker 'must go bankrupt'

Fokker, the struggling Dutch airplane maker, has repeated that bankruptcy was an unavoidable step in its continuing quest to secure its future. Mr Ben van Schaik, management board chairman, told Dutch television, "Only then can Fokker have any future". *Ronald van de Krol, Amsterdam*

VNU posts 25% improvement

Better results from business publishing in the US and Europe were the main factor behind a 26 per cent increase in 1995 net profits before extraordinary items, at VNU, the Dutch publisher. Net profits before extraordinaries rose from Fl 218m to Fl 274m ($166m), producing a 19 per cent increase in profits per-share from Fl 1.21 to Fl 1.44. VNU's dividend is to be raised 20 per cent from Fl 0.40 to Fl 0.48. Net profit, including extraordinary items, more than doubled from Fl 206m to Fl 430m, largely reflecting an earlier reported Fl 163m gain on the sale of Disclosure, the group's US information company. Turnover rose 10 per cent to Fl 3.05bn, with acquisitions accounting for slightly more than half the increase. *Ronald van de Krol*

Porsche sees surge in output

Porsche, the German sports car group which saw sales plummet in the early 1990s, expects to boost output to 18,500 units in the 1995-96 financial year, from 17,268 in 1994-95 and virtually double that to about 30,000 in 1996-97.

The sharp expansion would come from the group's new two-seater "Boxster" convertible due to be launched in September. Mr Hans Riedel, Porsche's head of sales and marketing, said more than 10,000 customers had made down-payments on Boxsters. Scotching fears that many would be trading down from Porsche's dearer 911 range, he said research into 2,500 potential customers had shown that 80 per cent were first-time buyers.

Porsche expected output to be divided equally between the 911 and the Boxster once the newcomer was in full production. Mr Wendelin Wiedeking, Porsche's chief executive, revealed the car, with a mid-mounted six-cylinder engine, would cost DM76,500 ($52,000) in Germany.

The company, which made net profits of DM10m in the first half of the current year, declined to give a full-year forecast beyond saying it should be "clearly better". Sales to the end of January 1996 jumped 17 per cent to 9,570, compared with the same period last year. *Haig Simonian, Geneva*

Danish shipyard to close

A reconstruction plan to save Copenhagen's Burmeister & Wain Shipyard collapsed amid mutual recriminations between the yard's creditors. The Danish company's receivers said they would now close the yard in about 14 days when it had completed its last order.

The reconstruction plan was provisionally agreed on February 17, but yesterday American insurance companies holding convertible bonds in the shipyard said the agreement terms had been violated.

Two creditors, insurance company Old Mutual and Chemical Industrial Bank, have made a side-deal by which they would receive cash for their bonds from Japan's Mitsui Engineering Company. Mr Wilbur Ross, of Rothschilds in New York, acting for US bondholders, said this constituted unfair preferential treatment for two creditors. *Hilary Barnes, Copenhagen*

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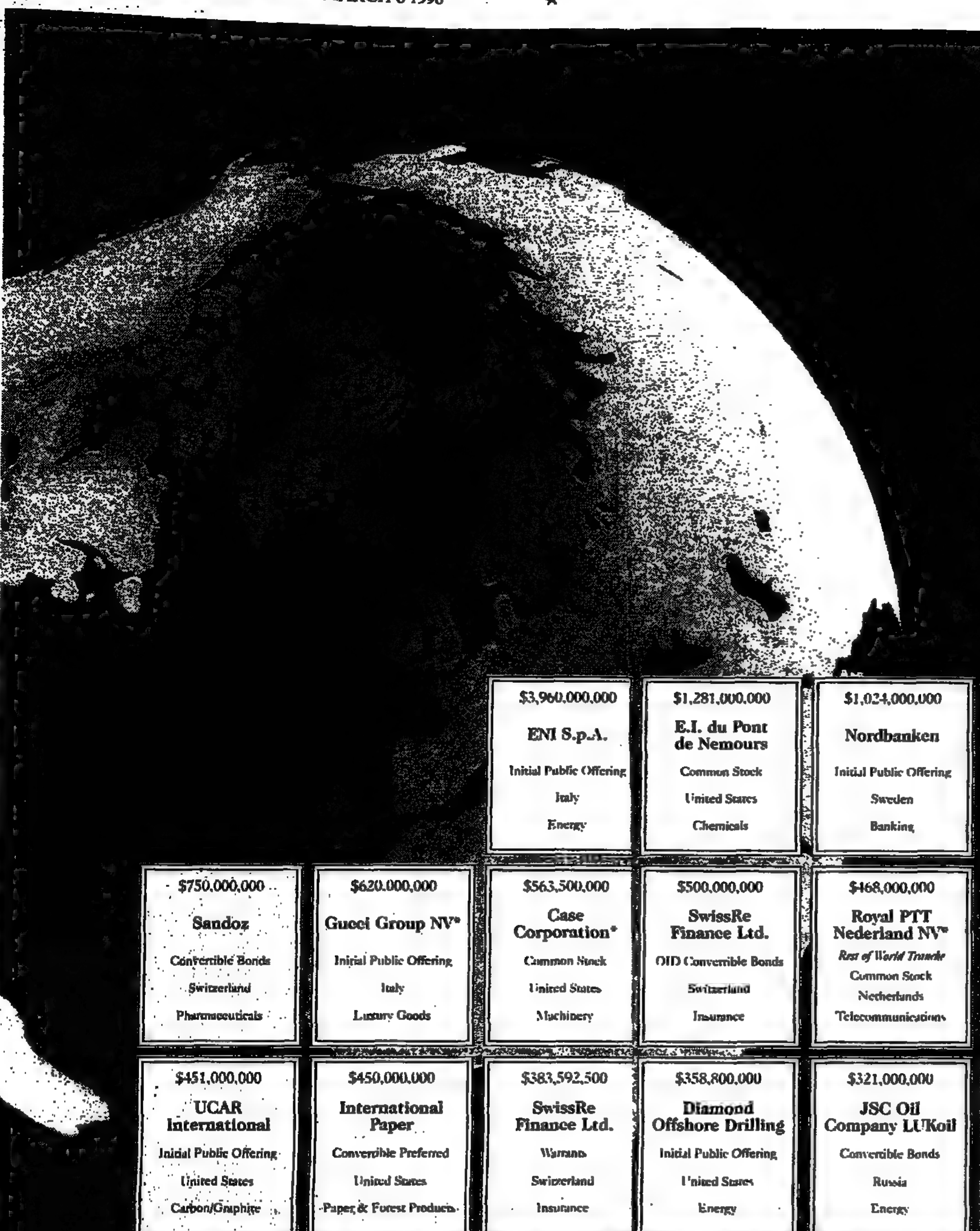


Global Performance

One Firm Made A World Of Difference In Equity Capital Markets In 1995.

The name: CS First Boston. Last year we led more than 50 issues raising over $15 billion of equity capital for our clients. Among them were many of the year's most complex deals – landmark transactions that required the kind of innovative solutions that we bring to all our clients around the globe.

$3,960,000,000	ENI S.p.A.	Initial Public Offering	Italy	Energy
$1,281,000,000	E.I. du Pont de Nemours	Common Stock	United States	Chemicals
$1,024,000,000	Nordbanken	Initial Public Offering	Sweden	Banking
$750,000,000	Sandoz	Convertible Bonds	Switzerland	Pharmaceuticals
$620,000,000	Gucci Group NV*	Initial Public Offering	Italy	Luxury Goods
$563,500,000	Case Corporation*	Common Stock	United States	Machinery
$500,000,000	SwissRe Finance Ltd.	OID Convertible Bonds	Switzerland	Insurance
$468,000,000	Royal PTT Nederland NV*	*Rest of World Tranche* Common Stock	Netherlands	Telecommunications
$451,000,000	UCAR International	Initial Public Offering	United States	Carbon/Graphite
$450,000,000	International Paper	Convertible Preferred	United States	Paper & Forest Products
$383,592,500	SwissRe Finance Ltd.	Warrants	Switzerland	Insurance
$358,800,000	Diamond Offshore Drilling	Initial Public Offering	United States	Energy
$321,000,000	JSC Oil Company LUKoil	Convertible Bonds	Russia	Energy
$301,000,000	SGL Carbon*	Common Stock	Germany	Carbon/Graphite
$283,400,000	California Energy Company	Common Stock	United States	Energy
$255,300,000	Northwest Airlines	Common Stock	United States	Transportation
$220,000,000	Fletcher Challenge	Common Stock	New Zealand	Forest Products
$227,700,000	ASM Lithography Holding NV	Initial Public Offering	Netherlands	Technology
$190,400,000	Wolverine Tube	Common Stock	United States	Capital Goods
$190,400,000	Tele-Communications	Common Stock	United States	Media
$181,000,000	SGL Carbon*	Initial Public Offering	Germany	Carbon/Graphite
$172,500,000	K-III Communications*	Initial Public Offering	United States	Media
$171,700,000	Banco de A. Edwards	Initial Public Offering	Argentina	Banking
$166,000,000	Böhler-Uddeholm	Initial Public Offering	Austria	Specialty Steel
$163,400,000	Horace Mann Educators	Common Stock	United States	Insurance
$147,300,000	Genzyme Corporation	Tracking Stock	United States	Healthcare
$132,800,000	American Financial Group	Common Stock	United States	Insurance
$131,000,000	Houghton Mifflin/INSO	Stock Appreciation Linked Securities	United States	Technology
$115,000,000	Baby Superstore	Convertible Debentures	United States	Retail
$111,000,000	Sky City	Common Stock	New Zealand	Gaming
$106,000,000	Crisplant	Initial Public Offering	Denmark	Capital Goods
$102,000,000	Leucadia National	Common Stock	United States	Insurance
$98,000,000	Rauma Oy*	Initial Public Offering	Finland	Capital Goods
$92,500,000	ADVANTA	Stock Appreciation Linked Securities	United States	Financial Services
$90,100,000	American Radio Systems	Initial Public Offering	United States	Media
$90,000,000	Siam Sindhorn	Convertible Bonds	Thailand	Real Estate
$81,000,000	Comp USA	Common Stock	United States	Retail/Technology
$79,600,000	Baby Superstore	Common Stock	United States	Retail
$76,000,000	Lonrho Finance	Convertible Bonds	United Kingdom	Conglomerates
$75,400,000	Vencor	Common Stock	United States	Healthcare
$67,000,000	Christiania Bank*	Common Stock	Norway	Banking
$65,000,000	LG Chemicals Ltd.	Global Depositary Shares	Korea	Chemicals
$64,400,000	Easco	Initial Public Offering	United States	Capital Goods
$62,100,000	Toy Biz	Initial Public Offering	United States	Consumer Goods
$60,000,000	Argyle Television	Initial Public Offering	United States	Media
$50,000,000	Samsung Heavy Industries	Convertible Bonds	Korea	Capital Goods
$45,000,000	Genzyme Tissue Repair	Tracking Stock	United States	Healthcare
$45,000,000	Spacehab	Initial Public Offering	United States	Aerospace
$41,700,000	INSO	Common Stock	United States	Technology
$37,000,000	Repsol*	*Rest of World Tranche* Common Stock	Spain	Energy
$34,600,000	Ostex International	Initial Public Offering	United States	Healthcare
$32,000,000	Komercni banka	Common Stock	Czech Republic	Banking
$28,600,000	Pharmacyclics	Initial Public Offering	United States	Healthcare
$27,600,000	Commerce Bancorp	Common Stock	United States	Banking
$25,600,000	Alexander & Alexander	Common Stock	United States	Insurance
$10,300,000	Saga Communications	Common Stock	United States	Media

*Joint lead managed. Issued by CS First Boston Limited — regulated by

CS First Boston

Competition and costs take toll on Haeco

By John Ridding in Hong Kong

Hong Kong Aircraft Engineering Company (Haeco), a listed subsidiary of the Swire group, yesterday announced a sharp fall in profits for 1995 and warned of further difficulties and a fall in margins this year.

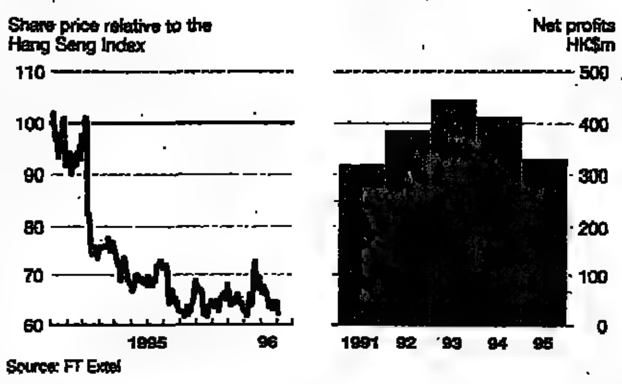
Revealing a 20 per cent fall in net profits, from HK$413.6m to HK$331.3m (US$42.9m), Haeco said the "disappointing result" largely reflected competition within the industry and the impact of inflation on its cost base.

Haeco has suffered from the rise in capacity in the international aircraft engineering industry, and from the steady erosion of profit margins. "Global overcapacity in heavy airframe maintenance has continued to have an adverse impact on market rates," the company said.

Mr Mark Simpson, head of research at ING Barings in Hong Kong, said the results were below expectations and the latest in a series of disappointments from the company. He said the main concern was the fall in operating margins, to about 11 per cent in the second half of the year from about 17 per cent in the comparable period in 1994.

Analysts forecast a further fall in underlying profits this year, although net profits will be boosted by a HK$156m exceptional item resulting from the formation of a 50-50 joint venture with Rolls-Royce last year. Mr Simpson cited some positive factors which would feed through, including a fall in inflation in Hong Kong and an upturn in aviation traffic.

Haeco



Source: FT Extel

For the moment, however, the outlook is difficult. "It is likely that margins in all areas of the company's business will continue to suffer," said Haeco.

Although falling, inflation would continue to push up the company's cost base and erode profitability, it said.

In addition, Haeco said that Cathay Pacific, its biggest customer and another member of the Swire group, was expected to reduce its requirements for heavy airframe maintenance in Hong Kong. This is partly because the two-bay hangar a[t] Taeco, the company's associ[ate], becomes operational thi[s] year.

Taeco, which is based in Xia[men] in southern China, i[s] expected to see strong growt[h] as a result of its low costs. However, the Swire grou[p] claims the overall growth i[n] air traffic and maintenanc[e] requirements in the region wi[ll] be boosted by the completio[n] of Hong Kong's new airpor[t]. This is scheduled for Apr[il] 1998.

Last year's result wa[s] achieved on sales o[f] HK$2.39bn, down slightly o[n] HK$2.41bn in 1994. Profits wer[e] lifted by a HK$17m exceptiona[l] item resulting from the di[s]posal of its stake in ASTA Ai[r]craft Services. Haeco said i[ts] total dividend for 1995 is to b[e] reduced to HK$0.80, fro[m] HK$0.94 in 1994.

Thai telecoms soar despite operating weakness

By Ted Bardacke in Bangkok

TelecomAsia and Thai Telephone and Telecom, Thailand's two private operators of fixed-line telecommunications services, have reported substantial profit growth for 1995.

Full financial details were not released, but analysts said most of the growth came from non-operating income.

TA, a joint venture between Thailand's CP Group and Nynex of the US which has a concession to install and operate 2.6m telephone lines in the Bangkok area, reported net profit for 1995 of Bt1.29bn ($51.2m), more than double the previous year's Bt638m.

TT&T, a joint venture between Jasmine and Loxley of Thailand and NTT of Japan which has a concession to install and operate 1.5m lines in the Thai provinces, reported net profit for 1995 of Bt830m, a 336 per cent increase over 1994's Bt190m.

Analysts said at least 70 per cent of the profit of the two companies came from non-operating income, in TA's case through the sale of shares in United Communications; TT&T's gain came through the capitalisation of overheads, and by not depreciating existing lines.

"We even think TA would have had a loss if it wasn't for the Ucom sale," said one analyst at a foreign brokerage house.

The main problem on the operating side is that in spite of an overall shortage of telephone lines in Thailand, the companies have saturated traditional markets of high usage with new lines, creating a surplus that is going unused and therefore not generating revenue.

More than one-third of TA's installed lines have no subscribers, while the figure for TT&T is above 50 per cent, analysts say.

This is happening at a time when ongoing installation, and hence capital expenditures, must continue: the companies must keep to a mandated installation schedule or risk losing favour with the government in what is an extremely politicised business.

Analysts point out that installation is likely to be completed by the end of 1996, when the companies can turn their focus more towards marketing.

In the case of TA, there is also the potential of added-value services delivered through their telephone lines, such as the recently inaugurated cable television service, Universal Cable Television.

The fixed-line results contrast with the continued high growth of mobile phone services, which reported surprising large profit growth on Monday – mostly on the back of sales in the provinces, where fixed lines are still in shortage.

NEWS DIGEST

O'Reilly's S Africa arm advances 45%

Independent Newspaper Holdings, the South African subsidiary of Irish entrepreneur Mr Tony O'Reilly's Independent Newspapers, posted a 45 per cent increase in attributable income to R60.7m ($15.6m) for calendar 1995, its first full year of trading.

Mr Liam Healy, chief executive of Independent Newspapers in Ireland, said the results "vindicated" the group's decision to take over the former Argus Newspapers group in the run-up to South Africa's first multi-racial elections in 1994.

Earnings per share rose 31 per cent from 92.7 cents to 134.6 cents, and the final dividend was 60 cents. The dividend for the group's first nine months of operation, to December 31 1994, was 20 cents.

The group launched three new titles at a cost of R9m during the period: The Sunday Independent, a broadsheet for the densely populated Gauteng province; and two supplements to existing national publications – Sunday Life magazine and Business Report. Only R1m of the start-up cost was taken last year.

Operating income before exceptional items was R102.3m, an increase of 41 per cent on turnover 21 per cent higher at R872m. Exceptional costs increased from R2.5m to R9m because of technological upgrades and job cuts. These were offset by a rise in margins from 12.3 per cent to 14,3 per cent, despite the sustained fall in newspaper circulation among the group's traditional market of predominantly white readers.

Mark Ashurst, Johannesburg

Pacific Dunlop court exclusion

Pacific Dunlop, the Melbourne-based conglomerate, said yesterday that a US court had excluded non-US persons from the class action being brought against the company's Telectronics heart pacemaker unit.

The litigation centres on a brand of pacing leads, some of which later developed faults. Pacific Dunlop, which is also facing legal actions in France, Canada and Australia, said the ruling would remove 18,500 potential plaintiffs from the US action.

Nikki Tait, Sydney

Meekatharra to proceed

Meekatharra Minerals, the small Australian exploration company, said it planned to go ahead with development of a gold mine at Way Linggo in southern Sumatra.

It said that the project would have a capital cost of US$15m, and the mine's project cash operating costs were below $200 per ounce. It said that, pending regulatory approvals and the securing of financing arrangements, it planned to begin mining in early 1997. Annual production was estimated at up to 35,000 tonnes of gold and 500,000 ounces of silver.

The Meekatharra statement was made in response to a stock exchange query over the recent rise in the company's shares.

Nikki Tait

Orlando Wyndham expansion

Pernod-Ricard, the French wines and spirits group, is to expand production facilities at its Orlando Wyndham winery in South Australia. According to a South Australian government delegation, which met the company in Paris, a new bottling line is to be installed, and vineyard development stepped up.

Nikki Tait

Toshiba Corp raises forecast

Toshiba Corp's sales of personal computers worldwide will exceed Y400bn ($3.8bn) in the business year to end-March 1996, much more than the company's previous forecast of Y383bn, the company said yesterday.

"The yen's stabilisation has provided a better exchange rate advantage than budgeted," it said. This is important because most of Toshiba's PC sales are overseas, it noted.

Reuter, Tokyo

Honda Motor in Vietnam

Honda Motor is awaiting final approval for a project which would see the Japanese company's motorcycles produced for the first time in Vietnam. A licence for the project – a joint venture plant 30 per cent owned by Vietnam's Agricultural Machines, and 70 per cent by Honda and a Thailand-based subsidiary, Asian Honda Motor – may be granted within days.

The plant, to be located in Vinh Phu province north-west of Hanoi, is capitalised at $30m, and production could start within two years with initial output of of 300,000 motorcycles a year, rising to around 450,000 by 2005.

Small-engine motorcycles are fast replacing bicycles as the main means of transport in Vietnam's cities. In mid-1995 there were 2.7m registered motorcycles in Vietnam, a country of 74m people. Vietnam expects to import a further 2.35m before the end of the century, according to official figures.

Meanwhile, Malaysia Holdings has signed an agreement to manufacture and distribute electric scooters in Asia for France's Peugeot group. The company currently assembles and distributes Peugeot cars in Malaysia.

Reuter, Hanoi and Kuala Lumpur

Sales climb to $760m at De Beers

By Mark Ashurst in Johannesburg

De Beers, the South African diamonds group basking in the wake of last week's pact with the Russian government to preserve its dominance of world diamond supply, yesterday posted a 21 per cent increase in income from diamond sales in calendar 1995, to $760m.

Combined attributable earnings for De Beers Consolidated Mines and De Beers Centenary rose 11 per cent from $560m to $624m. Equity-accounted earnings were up 18 per cent to $986m as retained earnings from associates rose 33 per cent to $362m.

Combined final dividends increased 15 per cent to 67.4 cents per De Beers/Centenary linked unit, which boosted the year's dividend to 92.9 cents from 84.4 cents.

Analysts welcomed the terms of the deal with the Russian government, which guarantees exclusivity for De Beers to buy 95 per cent of Russian diamonds for export and distribution through the group's London-based Central Selling Organisation.

Net diamond stocks were $4.7m against $4.4m, with stockpiles at the South African Venetia mine 43 per cent higher at R1.6bn ($410.3m) compared with R1.2bn.

Income from investments, notably Anglo American and its industrial arm, Amic, was $223m against $196m.

Although non-diamond interests comprised 58.6 per cent, or R38.5bn, Beers has traded at a discount of 28.7 per cent to net asset value.

Steady growth at Telekom Malaysia

By Alan Cane

Telekom Malaysia, the country's largest listed company, produced revenues and net profits for 1995 generally in line with analysts' expectations. The company, which was partially privatised four years ago, said it was confident of sustaining growth.

The group reported pre-tax profits of M$1.93bn (US$758m), a 15 per cent improvement on the year before. Revenues came in 17 per cent ahead at M$5.25bn, while earnings per share were up 13 per cent at M$0.79.

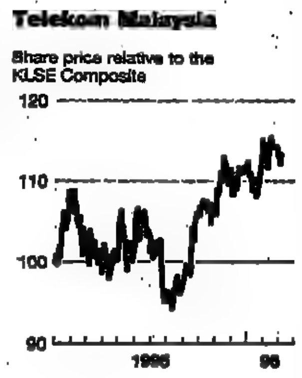
Mr Mohamed Said Mohamed Ali, chief executive, said it had been a satisfactory performance despite a year of reorganisation and restructuring. He said the group intended to use its profits in capital expenditure to increase telecoms facilities for its customers.

The group would match or increase its capital expenditure to meet its obligation to provide universal service and to improve services in rural areas, he said.

Residential line growth, at 16 per cent, was weak in the second half of the year compared with 19.5 per cent in the first six months. Business line growth, however, was 17.3 per cent in the second half compared with 16.5 per cent in the first, so that growth in this sector exceeded residential line growth for the first time since 1991.

Mr Andrew Harrington, Asian telecoms analyst with Salomon Brothers, said he believed the decline in residential line growth in the latter part of the year was an aberration. "We do not believe that business line growth can exceed residential line growth in the next few years, a[nd] expect the historic trend [to] re-emerge in 1996."

Telekom Malaysia



Source: FT Extel

He said that because of hi[gh] line growth in the past fe[w] years, Telekom Malaysia w[as] now experiencing diminishi[ng] returns characterised [by] declining margins, falling re[ve]nue per line (masked by l[ow] residential line growth in 19[95]) and shrinking waiting lists.

Concern that the grou[p's] profitability would be affect[ed] by increased competition [after] the government awarded op[er]ator's licences to nine com[pa]nies was played down by Te[le]kom's general manager [of] corporate finance, Mr R[aja] Noorma Raja Othman. He sa[id]: "There will not be mu[ch] impact this year from comp[eti]tion because of rationalisat[ion] in the industry."

Southcorp blames higher interest charges for fall

By Nikki Tait in Sydney

Southcorp, the former SA Brewing group which takes in packaging, appliance manufacturing and wine interests, yesterday announced a 14.2 per cent drop in after-tax profits in the six months to end-December, to A$52.4m (US$39.8m). In the same period a year ago it made A$61m.

The company said sales increased from A$1.17bn to A$1.32bn, while operating profit before tax and abnormal items was 11.2 per cent lower, at A$92.1m.

The downturn was blamed partly on higher interest charges. These almost doubled to A$30.1m as Southcorp acquired Hoover Australia from Maytag of the US and also the Smorgen PET plastic bottle operations.

On a divisional basis, Southcorp said that pre-interest earnings from the appliance business were down 52.6 per cent to A$14.6m. The result was below expectations, and the company said sales volumes had been hit by the downturn in Australia's housing market.

The US water heater group, meanwhile, remained in the red, but with losses reduced, and Southcorp said it was hopeful of a profitable June quarter. On the packaging front, pre-interest profits rose 11.2 per cent, in line with expectations.

Rural sector demand rose, although a cool summer affected sales to the beverage producers.

The wine division remained the most buoyant part of the business, with pre-interest earnings rising almost 25 per cent to A$47.6m. In the UK, sales were up 20 per cent, and in the US, by 75 per cent. The company said it was looking for an international wine acquisition before the end of the year.

The group's shares ended 4 cents lower at A$3.27.

NZ publishe[r] up 25% at nine months

New Zealand publisher Wil[son] and Horton, which yester[day] announced nine-month af[ter-]tax profits of NZ$35.6[m] (US$24m), said tight busin[ess] conditions had hurt volume[s in] all sectors of the media, Re[uter] reports from Wellington.

The company said the re[sult] represented a 25 per c[ent] increase in earnings be[fore] interest and tax.

"Notwithstanding the d[iffi]cult conditions ... the N[ew] Zealand Herald traded stro[ngly] with total advertising volu[mes] 5.7 per cent ahead of last ye[ar's] corresponding period and r[eve]nue 11.7 per cent ahead," [Wil]son and Horton said.

The demand for col[our] advertising had been stro[ng] and extra colour and insert facilities would be instal[led] during the current year.

Wilson and Horton said [the] publishing market remai[ned] competitive, but its two we[ekly] magazines had produced s[atis]factory profit results.

Last month it [an]nounced that Mr Phillip [...]tace, former Avis finance di[rec]tor for Australasia, was join[ing] the publisher as chief financ[ial] officer.

هكذا من الأصل

WR Grace snubs Hercules merger approach

By Tony Jackson in New York

Shares in W.R. Grace, the embattled US chemicals company, jumped 11 per cent yesterday on news that it had rejected a merger approach from Hercules, a fellow US speciality chemicals producer. The rise of $7¾ a share to $76¾ valued Grace at $7.4bn.

Mr Thomas Gossage, chairman of Hercules, resigned from the Grace board on Monday, saying he had put a merger proposal to Grace's chairman, Mr Albert Costello, after being prompted by several large shareholders in both companies. Grace said its directors had voted against the offer. Mr Costello said "it is not the right time, and Hercules is not the right company".

Hercules would not comment on market speculation that it might launch a hostile bid, beyond saying it was considering various options. Its market value of $6.9bn is roughly the same as Grace's, and it has little debt after a recent series of disposals.

Hercules said its offer was not intended to block Grace's agreed merger of its medical division with Fresenius of Germany, announced a month ago. That deal also drew opposition, in the form of a rival $3.8bn offer for the division from US healthcare group Baxter International, since withdrawn.

In a letter to Mr Costello, Mr Gossage said now that Grace was about to become a pure chemical company, a merger could provide "tremendous opportunities". Mr Costello denied there were synergies, saying: "If there were strategic overlaps, we would not have put Tom Gossage on the board in the first place."

Last year, Hercules had operating profits of $363m on sales of $2.4bn. Grace's chemicals business – excluding healthcare – had operating profits of $387m on sales of $3.7bn. Grace's products range from plastic packaging to catalysts and sealants. Hercules makes chemicals for such industries as paper, food, fibres and electronics.

The Hercules approach is the latest in a series of corporate upheavals at Grace, which has been in turmoil since the ouster a year ago of its chief executive officer, Mr J.P. Bolduc. This led to a shareholder revolt, the resignation of most of the board and the appointment of Mr Costello, a former head of the US chemicals company American Cyanamid.

Wall Street analysts suggested yesterday that a number of international chemicals groups besides Hercules could be interested in buying Grace, which is one of the biggest speciality chemicals manufacturers in the world.

Corel confident of a perfect repackaging

Senior executives of Corel, the Canadian software maker, were at WordPerfect's offices in Orem, Utah, last Friday for a burst of corporate cheerleading to welcome the word-processing software group into the Corel fold.

Corel, which bought WordPerfect in January from Novell, the networking software specialist, is eager to show WordPerfect's 600 employees, as well as sceptical outsiders, that the deal has the makings of an exciting and rewarding partnership.

Over the next few weeks, each WordPerfect employee will be linked to head office in Ottawa by Corel's new video communication system, which includes a small camera mounted on every PC monitor.

Nor is Corel is wasting any time applying its vaunted marketing skills. A renamed and repackaged Corel WordPerfect is to be launched within the next few weeks. "It's going to be supported by megabucks of advertising," promises Mr Michael Cowpland, Corel's founder and chief executive. More ambitious co-operative ventures are in store later in the year.

Corel's efforts underscore the high stakes riding on its new acquisition, both for WordPerfect and itself. The Canadian company needs WordPerfect to help broaden its base. Its flagship product, the popular CorelDraw graphics software, made up 74 per cent of sales, totalling US$196.4m, in the fiscal year to November 30.

Corel has left few stones unturned in perfecting and marketing CorelDraw in the six years since it was launched. "The only things left for them were acquisitions or new products," says Mr Tom Astle, analyst at Midland Walwyn in Toronto.

For WordPerfect, the arrival of a new parent offers hope of rejuvenation. WordPerfect remains one of the most popular word-processing programs, but has steadily lost ground in recent years, notably to Microsoft Word. Its business version, PerfectOffice, has market share of only about 5 per cent, versus more than 90 per cent for Microsoft Office.

Novell bought WordPerfect two years ago for $1.4bn, but received only $116m – all in shares – from Corel. This made it Corel's biggest shareholder, with a 16 per cent fully-diluted stake. According to Mr Cowpland, Novell "really wasn't promoting [WordPerfect] strongly in the past 18 months". Its Windows 95 version, known as WordPerfect 7, is due for launch in April, six months behind the comparable Microsoft Word product.

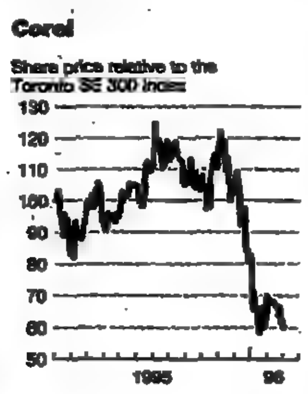
Words and pictures: Corel is aiming to broaden its product base

Corel appears to be better placed than Novell to revive WordPerfect. "There's a much better culture fit with the folks at Corel than there ever was at Novell," says one WordPerfect employee. While Novell's customers mainly comprise staid information technology specialists and engineers, Corel is driven by the pizazz of the retail market.

Mr Cowpland, a fast-talking Englishman with a collegiate management style, first came to prominence the 1970s as co-founder of Mitel, the telephone equipment maker. His lifestyle is epitomised by a convertible Porsche with the registration COREL.

Advertising outlay made up 28 per cent of Corel's 1996 sales. While revenues rose 19.5 per cent, advertising spend shot up 72.8 per cent to $55.1m. Mr Cowpland says this year's advertising budget will top $100m. The company spends heavily on sports sponsorship.

Concern about Corel's prospects has grown recently. Disappointing shipments of a new CorelDraw version designed for Windows 95 pushed the company to a $1m loss in the final quarter of fiscal 1995, compared with earnings of $11.2m a year earlier. The WordPerfect purchase has failed to revive Corel's share price, which has slipped to C$14.25 on the Toronto stock exchange, from last year's peak of C$26.62.



Source: FT Extel

WordPerfect and PerfectOffice sales were US$400m in Novell's latest fiscal year, ended October 31. But first-quarter revenues this year were only about $50m. "If they get $150m from WordPerfect this year, they'll be lucky," says one analyst, who has told clients to steer clear of Corel.

Stronger results are likely over the next few months. But analysts caution against reading too much into the performance. Earnings are likely to be buoyed as the new versions of WordPerfect and PerfectOffice are pushed into the distribution pipeline.

Concerns about WordPerfect include the high proportion of users who still use the old Dos operating system and are not expected to upgrade to Windows or Windows 95 soon. They also worry that Microsoft might try to outflank Corel by bringing out a graphics product to take on CorelDraw.

Mr Cowpland dismisses these fears. He predicts that, with proper marketing, software users will better appreciate WordPerfect's superior features – for example, the one-tenth point increments in its font sizes, versus Microsoft's one-half point increments.

The new Corel WordPerfect will be more than a word processing programme. Starting with WordPerfect 7, extras are likely to be added to the traditional word processing package, such as a Netscape internet browser, and various multimedia and graphics products. PerfectOffice may include Novell's electronic publishing and workgroup-sharing software.

As for the danger of Microsoft entering the graphics market, Mr Cowpland says that "they'd have to buy a product that we've already demolished in the market place". In any case, he expects any foray by Microsoft on to Corel's turf to be delayed at least six months by US antitrust scrutiny.

Even sceptical outsiders temper their concerns with respect for Corel's marketing flair and youthful energy. "There is great leverage [in the WordPerfect deal]," Mr Astle says. "They could make us all look silly."

Bernard Simon

Cemex plans big acquisition in Asia

By Daniel Dombey in Mexico City

Cemex, the Mexican company which is the fourth-largest cement concern in the world, plans a big acquisition in Asia within the next two years, according to Mr Gustavo Caballero, the company's chief financial officer.

Cemex already operates in Spain, Venezuela and the US, and saw improved operating margins in all three countries in 1995. According to results announced last week, 63 per cent of sales came from outside Mexico, allowing the company to increase cash flow 14 per cent in peso terms to 6.3bn pesos ($832m) despite the Mexican recession.

"Most of our peers [in the cement industry] work in mature markets. We are rather the opposite," Mr Caballero said. Cemex hoped to increase its presence in emerging markets, he added, to balance the higher volatility of such countries. "Asia would be a good balance for our existing operations."

Cemex already has a sales presence in Asia, and has had an office in the region for some years. Sales in Asia made up 48 per cent of Cemex's Mexico operations' exports of 859m pesos in 1995.

"Cemex always starts exporting cement, then it opens distribution terminals and finally it makes an acquisition or starts an association," said Mr Roberto Carrillo, Latin American cement strategist at ING Barings in Mexico City.

Mr Caballero said a further acquisition could be financed by securitising a revenue stream or with a part-equity purchase. Though debt covenants prevent Cemex going beyond 55 per cent leverage, Mr Caballero said that the level of 51.5 per cent reported for the end of 1995 left some room for manoeuvre.

"Our debt situation was very good before the Mexican crisis," he said. "But once that took place, even though we are still sound, we are now near the limit, not to meet obligations, but to grow."

AMERICAS NEWS DIGEST

Auction revival boosts Sotheby's

Sotheby's Holdings, the auctioneer, financial services and real estate group, announced a continued recovery in revenues and earnings in 1995. It said auction sales were $1.67bn, the highest since 1990, and the fourth-best in the group's history. Revenues for the year rose 20 per cent, from $260m to $313m, and net income by 61 per cent, from $20.3m to $32.6m. Earnings per share increased from 36 cents to 58 cents.

In the fourth quarter, which yielded the bulk of the group's profits, net income rose from $17.8m to $27.5m, and earnings per share from 31 cents to 48 cents. The rise in auction sales was led by a near doubling in sales of impressionist and modern art – to $176m – and a 38 per cent gain in sales of jewellery to $70m. Three large sales of private collections contributed $174m.

Revenues from auctions fell as a percentage of auction sales, from 17.6 to 17.1 per cent over the year. Sotheby's said this reflected a change in mix to higher average lot values, and the competitive pricing pressures in the market.

The new schedule of seller's commissions, announced last September, has yet to have a significant effect. Analysts said this should begin to have an impact in the first half of the current year. However, they said the lack of large private collection sales could make comparisons with last year difficult. Sotheby's is due to auction $5m worth of art and objects owned by Mrs Jacqueline Kennedy Onassis in April.

Maggie Urry, New York

Tortilla switch lifts Maseca

Grupo Industrial Maseca, the food company which dominates Mexico's cornflour market, announced a 5.3 per cent rise in 1995 sales to 3.4bn pesos ($449m). Volumes were up 17 per cent on the year before. The company's strong cash position of 935m pesos at the end of 1995 helped it mark up a 34 per cent increase in net profits to 464m pesos for the year.

Maseca has benefited from the country's continuing switch to tortillas made from cornflour rather than ground maize. Maseca claims 70 per cent of the cornflour market, which in turn accounts for 44 per cent of all tortillas.

"Tortillas are far more important than bread in Europe or rice in Asia," said Mr Javier Velez, head of corporate finance. "The demand does not fluctuate with the economic situation." Despite a fall in real prices, operating profits increased 23 per cent to 557m pesos.

The company said it had reduced expenditure on advertising and cut administrative costs, while the opening of three new plants and modernisation of Mexico City operations helped reduce freight expenses.

Daniel Dombey, Mexico City

Operating profit falls at ICA

Empresas ICA, Mexico's largest construction company, reported a fall in operating income to 246m pesos ($32.5m) for the fourth quarter last year, compared with 454m pesos for the same period a year before. Net loss for the quarter, in which interest rates rose, stood at 130m pesos compared with a loss of 624m pesos in the quarter last year.

Daniel Dombey

Loblaw plans stock split in May

Loblaw, Canada's biggest food distributor, which is owned by the Weston family, plans a three-for-one stock split in mid-May, bringing total shares outstanding to 240m and broadening the market in the company's shares. Loblaw is also raising C$300m (US$219m) with a medium term note issue to fund modernisation and expansion. The market values Loblaw at nearly C$3bn. The company earned C$148.7m in 1995, 17 per cent up on 1994.

Robert Gibbens, Montreal

Emap close to £145m French magazines deal

By Christopher Price

Emap, the publishing and media group, is close to purchasing three leading French consumer magazines from Compagnie Luxembourgeoise de Telediffusion for £145m ($223.3m).

The deal would provide the highly-acquisitive Emap with some of France's top-selling titles, such as Top Sante, a women's monthly magazine with a circulation of 700,000, and Tele Star, a television listing magazine with weekly sales of 2m. Annual revenues of the business last year were about £90m.

Emap is understood to have beaten off stiff competition from Springer Verlach of Germany to secure the deal which will increase by more than a half Emap's revenues from its French operations and raise its market share of the country's consumer magazine market from 11 per cent to 15.

Emap entered France in 1990 but made its biggest move in June 1994, spending FFr710m in the purchase of on Editions Mondiales, a Paris-based publisher. Three other smaller acquisitions, totalling FFr205m, accompanied that deal, including France's biggest selling motoring magazine, L'Auto Journal.

It is thought that the UK group will pay for its latest purchase from existing resources. Borrowings stood at £234m at the interim stage in November, a rise of 74 per cent over the previous period. With the group's cash flow taken into account, analysts are forecasting borrowings of £336m should the deal go through, against shareholders' funds of £152m in the year to March 31, 1995.

As well as Tele Star and Top Sante, the latest acquisition would give Emap control of Tele Star Jeux, a puzzle magazine which has a monthly circulation of 215,000.

More wagons for Eurotunnel

Eurotunnel, operator of Channel tunnel car and freight "shuttle" services, yesterday placed an order for 72 additional freight shuttle wagons costing FFr106m from the French manufacturer, Arbel, for delivery in March-April 1998, writes Charles Batchelor.

It also took out an option for a further 144 wagons for delivery in January and December 1999 and announced plans to order up to nine more locomotives and six more club cars for carrying truck drivers.

The additional shuttle wagons will boost Eurotunnel's current capacity of 3,900 trucks a day by 7 per cent. It said it had sufficient capacity to meet foreseeable demand although traffic figures for February published yesterday showed further strong growth.

The new wagons will be of a simpler design than the original fleet, built by Breda of Italy, and will cost just one-third of the price.

Arbel makes automotive parts and freight railway rolling stock. The wagons will be built Arbel Fauvet Rail at its factory in Douai, northern France.

RESULTS

		Turnover (£m)		Pre-tax profit (£m)		EPS (p)		Current payment (p)	Date of payment	Corresponding dividend	Total for year	Total last year
Bluebird Toys	Yr to Dec 31	87.3	(99.4)	17.8	(19.7)	26†	(35.7)	5.75	May 22	5	9	8
British Biotech	9 mths to Jan 31	8.2	(2.7)	15.1L	(17.9L)	-	(-)	-	-	-	-	-
BSM	Yr to Dec 31	24.2	(24.3)	5.38	(4.86)	14	(12.8)	4.5	May 8	4.3	6.9	6.45
Burnfield	Yr to Dec 31	45.6	(39.6)	4.1	(3.1♥)	8.5	(6.3)	2	May 2	1.75	3.3	2.75
CRH ♣	Yr to Dec 31	1,911	(1,613)	160.5	(116.1)	35.55	(26.41)	6.35	May 10	5.6	9.1	8.1
European Leisure	Yr to Dec 31	36.69	(32.21)	2.22	(1.71)	16.8	(12.9)	-	-	-	-	-
Finelist	6 mths to Dec 31	52.6	(44)	4.05	(3.02)	8.2†	(6.6)	1.9	Apr 8	1.7	-	5.4
Indep Insurance	Yr to Dec 31 ★	410.5◆	(294.5)	35.6	(20.9)	53.5	(32.9)	6.65	May 31	5.5	11.25	9.5
Inspec	Yr to Dec 31	105.5	(74.1)	31.1♠	(13.3♥)	20.68†	(12.11)	4	May 13	2.67	6	4
Kerry ♣	Yr to Dec 31	1,199	(882.7)	43.2	(39.7)	23.3	(20.5)	2.23	May	1.86	3.33	2.86
Linx Printing	6 mths to Dec 31	8.58	(6.8)	0.782	(0.614)	3.5	(2.8)	0.9	Apr 19	0.7	-	2.1
Metal Bulletin	Yr to Dec 31	19.8	(17.4)	4.23	(3.25)	28.3	(21.9)	11.2	Apr 19	8	16	12
Pacer Systems §	Yr to Dec 31 ☆	27.6	(28.2)	1.3	(1.05)	0.14	(0.12)	0.035⅀	June 14	0.035	0.065	0.065
Pegasus §	Yr to Dec 31	6.43	(4.81)	0.893♥	(0.243)	10.3	(12.7‡)	4	June 7	3	6	5
Pendragon	Yr to Dec 31	508.9	(388.9)	11.3	(9.62)	19.7	(17.3)	6	Apr 11	5.4	9	8.1
Raine	6 mths to Dec 31	223.6	(247.2)	1.35L♠	(1.06)	0.79L	(0.38)	nil	-	0.5	-	0.5
Scottish TV	Yr to Dec 31	100.5	(118.3)	20.2	(2♠)	27.7†	(3.78L)	12.25	June 5	11.6	16.25	14.084
Singapore Para	Yr to Dec 31	1.03	(0.965)	0.61	(0.81♥)	5.52	(5.96)	3.5⚹	Apr 12	3.05⚹	3.5	3.05
Sotheby's ☆	Yr to Dec 31	312.9	(259.7)	54.3	(33.8)	58	(36)	8	Mar 12	6	28	24
Sthn Newspapers ɸ	6 mths to Dec 30	42.8	(40.8)	5.84♥	(4.85)	15.99	(14.4)	4.5	Apr 2	4	-	15.5
Transport Develop	Yr to Dec 31	510.4	(496.5)	36.1♥	(33.9♥)	16.5	(15.5)	6.5	May 3	6.5	9.5	9.5
WSP	Yr to Dec 31	25.3	(21.4)	1.8	(1.2)	4.7	(3.8)	1.1	May 7	1	2.2	2

Investment Trusts		NAV (p)		Attributable Earnings (£m)		EPS (p)		Current payment (p)	Date of payment	Corresponding dividend	Total for year	Total last year
Beacon	6 mths to Dec 31	125.92	(100.75)	0.196	(0.141)		(0.74)	-	-	-	-	1.6
Fidelity European	Yr to Dec 31	216.32	(173.53)	0.761	(0.257)		(0.49)	0.6⚹	May 21	0.3	0.6	0.3
Perpetual UK Small	Yr to Jan 31	306.8	(227.1)	0.351	(0.114)	4	(2.[illegible])	2.3	Apr 19	2.2	2.3	2.2
River Plate	6 mths to April 30	-	(-)	-	(-)	-	(-)	2	Apr 12	3	-	10.04
Shires	3 mths to Dec 31	-	(-)	-	(-)		(-)	4.2	Apr 30	4.2	-	16.8
SR Pan European	Yr to Dec 31	38.11	(32.75)	0.272	(0.278)	1...	(1.39)	1	Apr 30	1	1.3	1.3

Earnings shown basic. Dividends shown net except ⅀gross. Figures in brackets are for corresponding period. ♠After exceptional charge. ♥After exceptional credit. †On increased capital. ♣Irish currency ★ Comparatives restated. ◆Gross written premiums. §USM stock. ‡Reflects benefit from tax credit. ɸAim stock. ⚹Partly paid as foreign income dividend. ☆US currency.

M&S makes Canadian sale

By Roderick Oram, Consumer Industries Editor

Marks and Spencer is to sell its chain of 85 D'Allaird's stores in Canada, marking a further attempt by the UK retailer to find a profitable strategy in the country.

The purchaser is Comark, one of the largest speciality retailers in Canada with more than 500 stores under names such as Bootlegger, Irene Hill and Ricki's. Comark is owned by the publicity-shy Brenninkmeyer family.

Disposal of the D'Allaird's chain, acquired in the 1970s, will cost M&S about £15m, the group said, of which £10m, will be goodwill previously written off to reserves.

M&S has spent more than 20 years trying to make various formats work in Canada, the first foreign country it tried to break into. Its initial attempt to rationalise the operations came in 1992 when it sold the Peoples Stores chain.

"It would have been difficult to get it more wrong," Sir Richard Greenbury, M&S's chairman, said of Canada last year when he was unveiling a further expansion of its successful Asian business.

The formula that works best for M&S is to concentrate on stores with the same name and essentially the same lay-out and range of goods with which it has flourished in the UK. This will now be the sole thrust of its Canadian operations.

M&S encountered similar problems in the US as Canada, where it spent heavily to buy the Brooks Brothers clothing chain in 1987 and to rebuild it before finally returning it to profit.

Its purchase of the Kings supermarket chain in New Jersey was successful more quickly.

Continental Europe appears to be one of the overseas areas with the highest interest to M&S. It recently secured the lease on its first German store and plans others in the Ruhr.

The real test in each country, however, is MS's ability to generate sufficient momentum to switch from high-priced niche retailing to the mass market.

It did that in France in 1994 cutting prices by some 15 per cent. Profits dipped in the short term, but the group is now exploiting the lower pricing to build volume.

Future of Trafalgar portfolio uncertain

By Simon London, Property Correspondent

Uncertainty surrounds the future of Trafalgar House's £200m ($308m) commercial property portfolio following Monday's agreed £904m bid for the company by Kvaerner.

The Norwegian company has indicated that it is likely to sell the portfolio, cutting the remaining links with Trafalgar's origins as a property company in the 1960s.

However, it is not clear whether the portfolio will be broken up or sold in one block. Property agents said the mix of investment and development sites was unlikely to appeal to a single investor.

Although Trafalgar's property interests have dwindled, the company owns strategic sites including the Baltic Exchange in the City of London, where it has planning permission for a 350,000 sq ft office development.

The site is one of the few City development sites capable of accommodating a very large building of the type favoured by investment banks. If a tenant can be found there would be strong competition from UK and overseas investment institutions.

Other large development sites include Paddington Basin, where there is potential for a large office complex close to the central London terminal of the Heathrow Express rail link, and at Chiswick, west London.

The 33-acre Chiswick site, with planning permission for an office park, is held in a joint venture with British Land. They are already looking for a buyer.

Most of Trafalgar's investment properties are held in a joint venture formed in 1990 with Chartwell Land, the property arm of Kingfisher, the retail group.

Outside Marston House, Trafalgar owns a handful of larger investment properties such as the UK headquarters in Surrey of Sony, the Japanese electronics group.

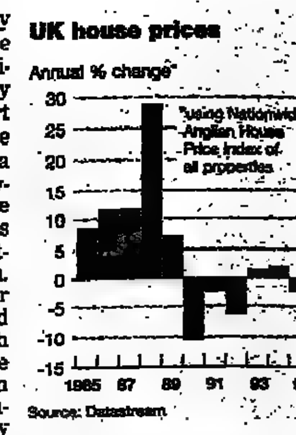
The Sony building is relatively new and generates annual rental income of about £4m. The larger buildings would attract strong bidding from UK investment institutions if they were for sale.

- Two Kvaerner shareholders have requested an extraordinary meeting to vote on the group's acquisition of Trafalgar House, writes Christopher Brown-Humes in Stockholm.

Under Norwegian law, public companies have to call an EGM if shareholders accounting for 10 per cent of their capital demand one. Kvaerner said the bid was "absolutely irreversible".

LEX COMMENT

UK housing



The UK's Labour party may have suddenly become the self-proclaimed "party of private housing", but Mr Tony Blair, its leader, seems short of new ideas to demonstrate this commitment. He made a blistering attack on the government's cuts in mortgage tax relief to homeowners yesterday, without suggesting he would reverse them. Meanwhile, his proposals for more flexible mortgages and loans for homeowners with negative equity – where the property is worth less than the loan – are hardly revolutionary. These are already offered by a raft of lenders. The only controversial element of his keynote speech was the proposal that mortgage lenders, like life assurance companies, become legally required to give "best advice".

Certainly, the draft code of lending practice by the Council of Mortgage Lenders does not go far enough – it does not provide automatic disclosure of commission or penalties for bad advice. But Mr Blair would do better to force the council to toughen the code rather than resort to legislation.

At least Mr Blair's statements will provide some comfort for the two-thirds of UK families who own their own homes. But property owners would gain greater benefit if the party regained its tag as the party of inflation, thereby fuelling a recovery in the housing market. After all, lower interest rates and tax cuts should help raise housing prices by some 2 per cent this year, but that hardly scratches the surface of recent declines.

DIGEST

BET chief could receive £5m

Mr John Clark, chief executive of BET, will receive more than £5m ($7.7m) if the £1.9bn hostile bid for the business services group by Rentokil is successful.

The figure, which includes a payment of about £3m from a controversial medium-term incentive scheme, provoked outrage from some BET institutional investors. One institution described the pay-off, one of the biggest to a director in UK corporate history, as a "disgrace".

The shareholders were angry that the money in the scheme is paid to directors if there is a successful takeover regardless of whether the relevant performance criteria have been met.

According to BET's 1995 annual report, a sum of £3.35m has been set aside for the executive directors who qualify for the scheme – Mr Clark and Mr Keith Payne, finance director. It is understood that Mr Clark qualifies for about £3m of that.

Mr Clark, who was paid a total of £1.1m last year including bonuses and pension payments, also stands to make a profit of £1.07m on his share options at the 200½p Rentokil cash and share offer. He is also understood to be on a three-year rolling contract with the group, with an annual salary of about £480,000.

The incentive scheme was introduced in 1993 and covers about 50 senior managers at the group.

Some institutional shareholders supported Mr Clark. One said: "You have to be flexible. The company was nearly bust when he took over and not many people were queueing up to do the job."

Geoff Dyer and William Lewis

Welsh Water A$30m investment

Welsh Water has made its first significant infrastructure investment overseas, paying A$30m for a 6.6 per cent stake in an A$1.78bn private road scheme in Melbourne, Australia.

The project is a 22km eight-lane highway through Melbourne linking four of the city's arterial routes in order to alleviate traffic congestion. The scheme was identified in 1990 by Acer, Welsh Water's engineering and environmental business, which will do design work for the project.

The toll highway will be run by Transroute, the French road operator. Welsh Water and Transroute are also in a consortium with John Laing and Tarmac to tender for private finance road projects in the UK.

Welsh Water said that investors in the Melbourne project would start getting a return soon after the start of the construction phase.

Other investors include the Australian Industrial Development Corporation and Hastings Funds Management, which backed this week's successful £1.2bn bid by PowerGen to buy the Yallourn power station in Victoria. *David Wighton*

S&P sees cuts in life offices

Several thousand jobs within the UK life assurance sector will go over the coming months, as companies continue to cut spending on staff, property and computer systems, according to Standard & Poor's, the credit rating agency.

In a review of the sector, S&P said it expected life companies to make further significant cuts in their costs this year as they reduced their charges in order to gain market share.

It expects "further substantial reductions" in the number of people selling life assurance.

The review follows moves in which S&P downgraded its ratings for companies including Clerical Medical, Scottish Provident and Norwich Union.

While it is optimistic about the sector's prospects in the longer-term, it expects new business levels to remain subdued both this year and next.

Of the 31 life offices for which it gives ratings, S&P rates one – Guardian Assurance – as having "weak" financial strength, and four – Crown Life, Friends' Provident, Royal Life, and Sun Alliance – as having "adequate" financial strength. The other 26 have higher ratings.

Despite the uncertain forecast for the sector, S&P believes the pace at which life companies withdraw from the overcrowded UK market will be slower than some have suggested. *Alison Smith*

Gehe's offer document today

Gehe, the German drugs wholesaler that took over AAH last year, today publishes the offer document in its £650m bid for Lloyds Chemists, the pharmacy chain.

A £621m bid for Lloyds from Unichem, the UK drugs wholesaler, lapsed last week when it was referred to the Monopolies and Mergers Commission.

The UK authorities have asked the European Commission to allow them to examine Gehe's offer of 500p a share cash, which would also lapse if referred to the MMC. The Reuter news agency yesterday quoted an official saying that there seemed to be a good case for referral, and adding that a preliminary decision would probably be taken later this week.

Shares in Lloyds put on 5p to 463p yesterday.

Both UniChem and Gehe already control about 30 per cent of the UK drugs wholesale market, which would increase to about 34 per cent on the acquisition of Lloyds.

There could also be concerns over vertical integration of wholesaling with a powerful retail presence. UniChem owns some 400 pharmacies and Gehe about 300 after its takeover of AAH. Combined with Lloyds's 928 pharmacies, either one would create a substantial retail chain.

The MMC has until June 28 to make its report on the Unichem bid. *David Blackwell*

هكذا من الأصل

COMMODITIES AND AGRICULTURE

North American wood pulp mills slash prices

By Bernard Simon, in Toronto

North American wood pulp mills have slashed prices amid a wave of recrimination among producers about the pulp market's recent decline.

Weyerhaeuser, one of the biggest producers, started the process at the end of last week by cutting the list price of northern bleached softwood kraft (NBSK), the industry's benchmark product, by 17 per cent to US$600 a tonne.

The latest reduction, which comes a month after a similar cut, brings NBSK prices to 40 per cent below the record $1,000 which producers tried unsuccessfully to impose on the market last October.

Weyerhaeuser's move was sparked by a sudden drop in spot prices in response to signs of unexpectedly weak demand for paper in many parts of the world. Several North American newsprint producers have abandoned a planned 7 per cent price increase that was due to take effect on April 1.

Inventories are bulging along the entire pulp and paper supply chain. According to the Canadian Pulp and Paper Association, Canadian pulp mill inventories climbed to 47 days' supply, from 40 days' in December and 17 days' at the peak last June.

Many mills have already announced temporary shutdowns in an effort to bring supply into line with demand. Another wave of closures is expected in coming weeks, with prices now close to some mills' cash production costs.

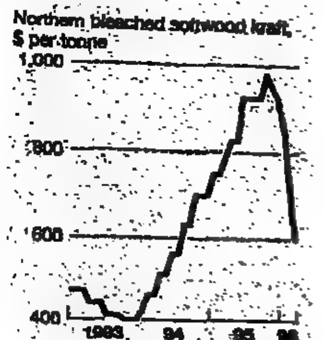
Mr David Pinneault, analyst at Resource Information Systems, a US consultancy, predicted that the NBSK price will bottom at about $500 this spring. He noted that the steep drop in prices was likely to encourage more mill shutdowns, which in turn should bring down inventories.

Pulp producers' battle for market share has been intensified by the emergence last year of Indonesia, previously a net importer, as a substantial, low-cost exporter.

"Some players decided to compete against the Indonesians on their own terms," said one large North American producer. "What started as price erosion became a price collapse." Fingers have been pointed at Georgia-Pacific, the US forest products group.

Producers such as Weyerhaeuser have also stirred up controversy in the industry by trying to support the market at specific levels. "I don't agree with holding a price in a falling market," one Canadian pulp marketing executive said.

Market pulp



Source: Hawkins Wright

Mining industry turns its back on fund raising

Kenneth Gooding reviews last year's spate of mergers, acquisitions and share buy-backs

Mining companies switched their attention last year from raising new funds and turned to mergers, acquisitions and buying back their shares.

The total of new equity and convertibles raised by the mining industry in 1995 was US$4.492bn, 56 per cent down from the record $10.123bn set in 1994, according to the annual analysis by Mr Nick Hatch at the Flemings Global Mining Group.

In 1994 the industry went on a feeding frenzy and gave investors a severe bout of indigestion. Because of this some proposed fund-raising operations were withdrawn last year.

However 1995 saw a surge in mergers and acquisitions in the mining sector, totalling $7.65bn. Of this, $2.6bn represented the removal of mining equity from the world's stock markets. In addition, $714m was removed from the North American market by stock buy-back programmes at companies such as Inco of Canada, the world's biggest nickel producer, Phelps Dodge, the biggest US copper producer, and Alcoa of the US, the world's largest aluminium group.

Mr Hatch says: "The result is that net mining equity issued to the market in 1995 was only $1.178bn or 0.5 per cent of the year-end industry capitalisation."

But 1996 has started with a boom, thanks to the unexpected rise in the gold price in January and February. Mr Hatch calculates that the mining industry has already raised $1.073bn this year – all but $2m of it for gold companies.

The proposed $2.3bn bid for Alumax by Kaiser, another US aluminium group, has been withdrawn, but the $2.385bn agreed offer for Diamond Fields Resources, which owns the huge Voisey's Bay nickel deposit in Labrador, by Falconbridge, the Canadian nickel group, is still on the table. Some analysts expect a rival offer before long.

"1996 is going to be a boom year for mining corporate financiers," Mr Hatch promises.

In his analysis of last year's fund raising, he recalls the "big three deals". One was Lihir Gold, where the partners in this Papua New Guinea project (including RTZ-CRA and Niugini Mining) raised US$459m from the sale of shares in the new company to Australian investors. The other big deals were the French government's receipt of $365m from the privatisation of Pechiney, Europe's biggest aluminium group, and Trelleborg of Sweden's sale of its 24 per cent shareholding in the Falconbridge nickel group to institutional investors for $358m.

In 1994 mining new issues totalled 5 per cent of the year-end market capitalisation, but last year the total was only 1.8 per cent.

On the mergers and acquisitions front the biggest cash transaction last year was when BHP, the largest Australian group, acquired Magma Copper of the US. This was completed in January but by the end of last year $1.39bn had been tendered.

The next three largest deals also had an Australian flavour: North joined in partnership with Rio Algom of Canada to pay $375m for International Musto and its 50 per cent share of the Bajo de la Alumbrera copper-gold project in Argentina; Goldfields paid $180m for Pancontinental, another Australian company; and Homestake Mining of the US bought the minority interest in its Australian subsidiary for $162m.

As for new equity and convertibles, Mr Hatch points out that North America was the dominant market, representing 45.3 per cent of the total raised. By commodity, precious metals made up 42.5 per cent of the funds raised, compared with 33.1 per cent in 1994 and 64 per cent in 1993. Base metals, which made up 24.8 per cent in 1993 and 36.1 per cent in 1994, moved up to 38.35 per cent of the total last year. Coal companies raised $970m in 1994 (there were two big financings, by RJB Mining in the UK and Zeigler Coal in the US) but only $44m last year.


Last year J. Burgess Winter (left), president and CEO of Magma, saw his company acquired by BHP, headed by John Prescott

Big mining and metals deals of 1995

Company	country	deal	value US$m
BHP	Australia	acquired Magma Copper (US)	1,390
Lihir Gold	Australia	sold shares to public	459
North/Rio Algom	Australia and Canada	acquired International Musto	375
Pechiney	France	privatisation	365
Falconbridge	Canada	Trelleborg sold 24%	358
Goldfields	Australia	acquired Pancontinental	180
Homestake	US	acquired minority of Homestake Australia	162

Source: Flemings Global Mining Group

De Beers calms Australian row

By Kenneth Gooding, Mining Correspondent

De Beers yesterday indicated that it had gone a long way towards patching up its dispute with the Australians who were threatening to leave the international cartel of rough (or uncut) diamond producers organised by the South African group.

Mr Gary Ralfe, managing director of De Beers' Central Selling Organisation, suggested agreement between the cartel and the Australians would bring price stability to the market for smaller rough diamonds, which are worth US$4bn a year and account for about 40 per cent of the total diamond market.

The news comes only days after the CSO reached agreement with Russia, another big producer that recently seemed intent on quitting the cartel.

In volume terms, Australia's Argyle mine is the world's biggest rough diamond producer but most of its output is of smaller and cheaper stones. Ashton Mining, one of the owners of Argyle, was incensed by price cuts imposed by the CSO last August which reduced the amount paid for Argyle diamonds by an average of 10 per cent.

Mr John Robertson, Ashton's chief executive, said his company and CRA, its partner in Argyle, might not sign a new contract with the CSO when the current one ended in June.

Yesterday, however, Mr Ralfe said that negotiations for a new contract with the Australians started last week in South Africa and that there had been two days of "comprehensive and constructive talks. My feeling was that both sides want to agree a new contract."

He suggested it was in Argyle's interest for the CSO to keep a tight grip on the market for smaller diamonds, which are usually cut in India. Mr Ralfe said indications that a deal would be struck with Russia had already helped stabilise prices of small diamonds. However stocks of both rough and polished stones – and bank debts – remained high in India.

Gold project wins approval

By Kenneth Gooding

After an arduous permitting process lasting 41 months and some acrimonious litigation, the US$319m Pipeline project in Crescent Valley, Nevada – destined to become one of North America's biggest gold producers – yesterday received the go-ahead.

Placer Dome of Canada, the 60 per cent joint owner and operator, said the Nevada Bureau of Land Management had approved the plans, and construction would start immediately. The open pit Pipeline mine is expected to start gold production in the middle of next year at an annual rate of 310,000 troy ounces. Reserves of 4.3m ounces will last 12 years. Placer's partner in the project is RTZ-CRA, the Anglo-Australian mining group, which has 40 per cent.

Last year Placer paid $30m to settle a legal dispute with Gold Fields Mining, part of Hanson, the Anglo-American conglomerate. Gold Fields claimed that Placer had not fully disclosed the nature of the Pipeline discovery when it secured the option contract to buy Gold Fields' mining claims in the area, near the existing Cortez gold mine that has been operating since 1968.

MARKET REPORT

Grain futures continue to slide

By Deborah Hargreaves

Grain futures at the Chicago Board of Trade continued to slip yesterday in fast trading after Monday's sell-off, but traders said sales were largely technical and not in response to a stronger outlook for grain.

Mr Jerry Gidel, agricultural analyst at Dean Witter Reynolds in Chicago, said the drop was confusing: "There is nothing in any forecast which suggests any change in moisture levels in the main winter wheat growing region."

A sharp drop in wheat futures pushed other agriculturals down, with March wheat falling 7¼ cents to $5.05 a bushel at mid session. Traders said hedge funds were unwinding speculative long positions and selling out of the agricultural complex.

"The funds have been very active in these markets and now they're taking profits. The psychological factor of the markets falling is prompting more selling," said one trader.

The March corn futures contract was 6¾ cents lower at $3.82 a bushel. Selling pressure was also spreading into soyabeans, which Mr Gidel said looked most vulnerable in the short term. "We could be looking at a lacklustre scenario for soyabeans in the next few weeks, but there is still a lot of uncertainty about the crop and I'm not saying these markets have seen their peak," he said.

LME WAREHOUSE STOCKS
(As at Thursday's close) tonnes

Aluminium	+4,300	to 664,525
Aluminium alloy	+900	to 74,380
Copper	-200	to 347,775
Lead	-1,625	to 99,200
Nickel	-366	to 38,256
Zinc	-1,325	to 632,225
Tin	-265	to 9,960

COMMODITIES PRICES

BASE METALS

LONDON METAL EXCHANGE
(Prices from Amalgamated Metal Trading)

■ ALUMINIUM, 99.7 PURITY ($ per tonne)

	Cash	3 mths
Close	1594-95	1624-25
Previous	1597-98	1627-28
High/low	1593/1592	1628/1622
AM Official	1593-94	1622.5-23.0
Kerb close		1623-4
Open int.	209,882	
Total daily turnover	38,814	

■ ALUMINIUM ALLOY ($ per tonne)

	Cash	3 mths
Close	1355-60	1390-95
Previous	1355-60	1390-95
High/low		1392/1390
AM Official	1350-55	1388-90
Kerb close		1390-5
Open int.	5,194	
Total daily turnover	586	

■ LEAD ($ per tonne)

	Cash	3 mths
Close	757-58	756-56.5
Previous	772.5-3.5	771-72
High/low	767	768/747
AM Official	767-68	763.5-64.0
Kerb close		751-2
Open int.	36,819	
Total daily turnover	8,227	

■ NICKEL ($ per tonne)

	Cash	3 mths
Close	7720-30	7825-30
Previous	7825-35	7930-35
High/low		7835/7770
AM Official	7734-35	7830-35
Kerb close		7775-80
Open int.	40,339	
Total daily turnover	8,328	

■ TIN ($ per tonne)

	Cash	3 mths
Close	6120-30	6165-80
Previous	6145-55	6210-15
High/low		6195/6175
AM Official	6110-20	6185-90
Kerb close		6175-80
Open int.	16,073	
Total daily turnover	4,855	

■ ZINC, special high grade ($ per tonne)

	Cash	3 mths
Close	1030.5-1.5	1052-52.5
Previous	1037-38	1058-59
High/low	1032.5/1032	1058/1054
AM Official	1032-32.5	1053-53.5
Kerb close		1052-3
Open int.	77,963	
Total daily turnover	43,685	

■ COPPER, grade A ($ per tonne)

	Cash	3 mths
Close	2587-90	2537-38
Previous	2597-600	2537-38
High/low	2583/2582	2548/2532
AM Official	2583-84	2532-33
Kerb close		2537-8
Open int.	167,843	
Total daily turnover	65,237	

■ LME AM Official £/$ rate: 1.5291
LME Closing £/$ rate: 1.5290

Spot: 1.5296 3 mths: 1.5268 6 mths: 1.5238 9 mths: 1.5209

■ HIGH GRADE COPPER (COMEX)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	117.95	-1.20	118.05	117.80	1,206	5,960
Apr	117.05	-1.30	118.00	117.00	240	1,535
May	116.45	-1.40	118.00	116.30	6,293	18,503
Jun	114.80	-1.20	115.40	114.60	4	767
Jul	113.55	-1.00	114.50	113.45	679	4,624
Sep	111.55	-0.80	112.00	111.50	41	2,847
Total					8,569	41,628

PRECIOUS METALS

■ LONDON BULLION MARKET
(Prices supplied by N M Rothschild)

Gold(Troy oz)	$ price	£ equiv	SFr equiv
Close	393.10-393.50		
Opening	393.70-394.10		
Morning fix	392.90	257.218	473.052
Afternoon fix	393.60	257.592	473.619
Day's High	393.60-394.20		
Day's Low	392.45-392.85		
Previous close	393.60-394.00		

Loco Ldn Mean Gold Lending Rates (Vs US$)

1 month	4.29	6 months	3.63
2 months	3.98	12 months	3.35
3 months	3.84		

Silver Fix	p/troy oz.	US cts equiv.
Spot	350.15	535.00
3 months	355.10	541.65
6 months	358.75	547.60
1 year	369.05	559.40

Gold Coins	$ price	£ equiv.
Krugerrand	393-396	257-259
Maple Leaf	404.90-407.40	
New Sovereign	92-95	60-62

Precious Metals continued

■ GOLD COMEX (100 Troy oz.; $/troy oz.)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	393.3	-0.8	-	-	2	1
Apr	394.8	-0.8	395.6	393.3	50,384	93,095
Jun	397.3	-0.8	398.3	396.0	5,957	41,216
Aug	399.7	-0.8	399.7	399.0	2,743	12,404
Oct	402.0	-0.8	-	-	88	4,189
Dec	404.4	-0.5	404.5	403.6	1,251	14,260
Total					59,987	209,298

■ PLATINUM NYMEX (50 Troy oz.; $/troy oz.)

	Sett price	Day's change	High	Low	Vol	Open int
Apr	408.3	+0.3	408.5	408.0	5,107	14,380
Jul	410.7	+0.2	410.5	408.0	803	6,047
Oct	413.0	+0.2	413.0	412.0	21	1,461
Jan	416.0	+0.2	-	-	526	786
Total					6,031	22,684

■ PALLADIUM NYMEX (100 Troy oz.; $/troy oz.)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	134.25	+0.50	134.75	133.50	58	203
Jun	134.75	+0.50	135.25	132.50	879	5,982
Sep	136.00	+0.50	-	-	1	136
Dec	137.25	+0.50	-	-	5	-
Total					894	6,382

■ SILVER COMEX (5,000 Troy oz.; Cents/troy oz.)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	534.8	-2.6	538.0	532.5	408	938
May	539.0	-2.7	543.5	536.5	25,913	51,122
Jul	543.8	-2.8	548.0	541.5	2,547	13,385
Sep	548.0	-2.8	552.0	547.0	568	11,182
Dec	554.6	-2.8	560.0	554.0	181	7,296
Mar	561.2	-2.8	-	-	110	2,656
Total					29,639	86,664

ENERGY

■ CRUDE OIL NYMEX (42,000 US galls. $/barrel)

	Latest price	Day's change	High	Low	Vol	Open int
Apr	19.40	+0.20	19.45	19.13	42,364	90,749
May	18.43	+0.10	18.50	18.25	26,081	67,847
Jun	17.94	+0.04	18.00	17.82	10,441	42,231
Jul	17.62	-	17.66	17.52	5,223	36,759
Aug	17.42	-	17.43	17.33	1,595	16,464
Sep	17.28	-	17.30	17.28	1,163	16,030
Total					86,887	416,493

■ CRUDE OIL IPE ($/barrel)

	Latest price	Day's change	High	Low	Vol	Open int
Apr	17.72	+0.22	17.78	17.52	14,300	54,172
May	16.88	+0.13	16.93	16.72	16,895	46,084
Jun	16.45	+0.15	16.45	16.30	3,675	29,246
Jul	16.14	+0.12	16.15	16.03	2,685	33,639
Aug	15.84	+0.08	15.89	15.85	695	8,241
Sep	15.87	+0.11	15.90	15.80	275	11,832
Total					38,693	208,524

■ HEATING OIL NYMEX (42,000 US galls.; c/US galls.)

	Latest price	Day's change	High	Low	Vol	Open int
Apr	52.60	+0.45	53.00	52.05	16,068	27,985
May	49.30	+0.19	49.50	49.00	5,167	14,047
Jun	48.05	+0.19	48.20	47.85	1,939	12,232
Jul	47.85	+0.24	47.95	47.70	840	7,874
Aug	48.60	+0.59	-	-	128	5,554
Sep	48.95	+0.24	49.00	48.85	121	2,728
Total					24,827	86,122

■ GAS OIL IPE ($/tonne)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	169.75	+2.75	170.75	166.50	7,461	23,030
Apr	158.25	+1.50	158.75	157.00	8,189	18,210
May	152.50	+0.50	153.25	152.25	2,109	7,087
Jun	150.00	+1.00	150.50	149.75	1,005	7,680
Jul	149.00	+0.50	148.50	148.50	70	4,969
Aug	149.25	+0.50	150.00	148.50	674	2,942
Total					17,942	73,997

■ NATURAL GAS NYMEX (10,000 mmBtu; $/mmBtu.)

	Latest price	Day's change	High	Low	Vol	Open int
Apr	2.165	-0.095	2.305	2.160	17,323	25,294
May	2.060	-0.060	2.155	2.060	4,519	18,078
Jun	1.990	-0.101	2.054	1.990	1,460	14,825
Jul	1.945	-0.015	1.980	1.945	1,059	12,906
Aug	1.920	-0.010	1.950	1.920	434	11,701
Sep	1.900	-0.020	1.925	1.890	446	9,007
Total					26,865	140,187

■ UNLEADED GASOLINE
NYMEX (42,000 US galls.; c/US galls.)

	Latest price	Day's change	High	Low	Vol	Open int
Apr	58.60	-0.13	59.20	57.90	8,083	30,276
May	57.95	+0.05	58.20	57.30	3,078	15,380
Jun	56.95	+0.15	57.20	56.65	1,160	7,831
Jul	55.65	+0.15	55.75	55.40	933	5,707
Aug	54.30	+0.10	54.30	54.30	784	3,055
Sep	53.65	+0.90	-	-	235	702
Total					13,993	63,527

GRAINS AND OIL SEEDS

■ WHEAT LCE (£ per tonne)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	116.10	-1.35	115.00	113.75	56	220
May	117.30	-0.76	117.35	116.60	374	3,504
Jul	119.30	-0.78	119.15	118.50	74	636
Sep	108.15	-0.36	108.65	108.65	5	285
Nov	110.55	-0.20	110.50	110.00	75	1,433
Jan	112.20	-0.05	112.25	112.00	70	278
Total					658	6,328

■ WHEAT CBT (5,000bu min; cents/60lb bushel)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	500.25	-3.25	516.50	505.00	2,426	7,336
May	494.50	-7.00	506.00	492.00	5,347	28,285
Jul	467.00	-10.25	468.50	453.50	47,056	48,755
Sep	460.00	-9.25	469.50	458.00	672	8,762
Dec	471.75	-8.25	480.00	470.00	794	6,600
Mar	472.00	-8.00	480.00	472.00	85	291
Total					18,789	100,882

■ MAIZE CBT (5,000 bu min; cents/56lb bushel)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	383.25	-6.00	389.00	381.50	53,505	24,508
May	380.00	-3.00	384.25	378.50	286,695	202,917
Jul	373.50	-2.75	377.25	371.75	112,300	120,852
Sep	323.75	-	325.75	322.00	13,540	35,561
Dec	311.00	+1.25	312.75	308.75	80,145	65,135
Mar	316.25	+1.25	317.75	314.00	379	7,123
Total					110,132	479,192

■ BARLEY LCE (£ per tonne)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	108.25	+0.25	107.75	107.75	20	385
May	108.80	+0.05	108.75	108.25	20	489
Sep	105.80	-0.20	-	-	-	37
Nov	107.25	-0.40	107.50	107.50	40	498
Jan	109.25	-0.40	-	-	-	60
Total					80	1,447

■ SOYABEANS CBT (5,000bu min; cents/60lb bushel)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	713.75	-6.50	722.75	710.00	7,730	6,883
May	723.50	-6.50	732.50	720.00	174,710	70,689
Jul	732.00	-8.00	741.00	728.00	8,755	48,091
Aug	733.25	-6.00	741.50	730.50	285	5,800
Sep	724.25	-3.75	732.50	724.00	259	3,868
Nov	720.50	-4.00	729.00	720.00	38,930	50,855
Total					80,604	192,686

■ SOYABEAN OIL CBT (60,000lbs; cents/lb)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	23.45	-0.05	23.62	23.32	5,301	4,368
May	23.80	+0.02	24.02	23.68	8,970	37,058
Jul	24.18	-	24.40	24.08	2,983	25,787
Aug	24.36	-	24.55	24.30	1,207	7,463
Sep	24.55	-	24.75	24.40	301	3,770
Oct	24.73	+0.01	24.90	24.65	95	2,894
Total					19,417	80,425

■ SOYABEAN MEAL CBT (100 tons; $/ton)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	226.6	-2.7	229.5	226.2	5,452	4,288
May	230.1	-3.1	233.4	229.0	15,582	39,248
Jul	233.3	-2.9	236.5	232.9	3,918	22,757
Aug	234.8	-2.4	237.9	233.2	145	5,401
Sep	233.4	-2.2	236.2	233.2	116	3,170
Oct	229.6	-1.9	232.3	229.0	119	2,545
Total					28,358	85,882

■ POTATOES LCE (£/tonne)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	200.0	-	-	-	-	-
Apr	186.3	-	185.5	184.0	22	875
May	198.0	-	-	-	-	39
Jun	225.0	-	-	-	-	-
Nov	105.0	-	-	-	-	-
Total					22	979

■ FREIGHT (BIFFEX) LCE ($10/index point)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	1408	+30	1410	1375	37	814
Apr	1415	+25	1416	1390	132	1,356
May	1410	+40	1410	1375	82	188
Jul	1255	+21	1300	1285	10	1,718
Oct	1338	+20	1341	1315	41	821
Jan	1383	-2	-	-	-	32
Total					313	4,789

	Close	Prev
BFI	1347	1346

FUTURES DATA
All futures data supplied by CMS.

Minor Metals
European free market, from Metal Bulletin, $ per lb in warehouse, unless otherwise stated (last week's in brackets, where changed). Antimony: 99.6%, $ per tonne, 3,450-3,650 (3,425-3,650). Bismuth: min. 99.99%, tonne lots 3.50-4.00 (3.65-4.10). Cadmium: min. 99.95%, 148-160 (150-165) cents a pound. Cobalt: MB free market, 99.8%, 29.70-30.30 (30.00-30.75); 99.3%, 26.70-27.50 (27.30-28.00). Mercury: min. 99.99%, $ per 76 lb flask, 168-175 (160-175). Molybdenum: drummed molybdic oxide, 3.90-4.20 (3.95-4.20). Selenium: min 99.5%, 3.45-4.10 (3.50-4.30). Tungsten ore: standard min. 65%, $ per tonne unit (10kg) WO_3, cif, 50-60 (50-58). Vanadium: min. 98%, cif, 2.85-3.08 (2.80-2.98). Uranium: Nuexco exchange value, 10.00.

SOFTS

■ COCOA LCE (£/tonne)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	860	-5	872	866	38	240
May	894	-6	898	882	1,658	27,632
Jul	919	-7	924	918	612	18,404
Sep	939	-4	944	937	1,127	38,840
Dec	957	-5	962	957	834	18,957
Mar	976	-6	982	975	1,370	37,522
Total					5,674	151,284

■ COCOA CSCE (10 tonnes; $/tonnes)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	1214	-11	1229	1210	7	198
May	1230	-11	1243	1229	4,416	30,889
Jul	1255	-8	1268	1254	3,989	20,412
Sep	1278	-9	1289	1278	431	11,393
Dec	1313	-9	1322	1313	1,670	12,204
Mar	1340	-9	1349	1340	27	7,500
Total					10,554	96,161

■ COCOA (ICCO) (SDR's/tonne)

Mar 4	Price	Prev. day
Daily	912.53	918.07

■ COFFEE LCE ($/tonne)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	2009	+5	2030	1986	425	4,182
May	1834	+25	1856	1791	2,462	12,880
Jul	1768	+26	1775	1713	292	4,389
Sep	1733	+24	1740	1686	188	2,983
Nov	1708	+25	1710	1677	25	1,237
Jan	1685	+22	-	-	-	283
Total					3,399	25,734

■ COFFEE "C" CSCE (37,500lbs; cents/lbs)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	116.80	+2.40	117.40	113.85	72	1,976
May	114.20	+2.55	114.90	110.70	4,071	15,242
Jul	113.00	+2.60	113.30	109.75	372	4,224
Sep	111.65	+2.40	112.00	108.65	146	3,177
Dec	110.50	+2.15	111.50	107.80	71	1,356
Mar	110.30	+2.05	110.00	110.00	6	412
Total					4,749	28,595

■ COFFEE (ICO) (US cents/pound)

Mar 4	Price	Prev. day
Comp. daily	102.89	102.16
15 day average	108.50	109.30

■ No7 PREMIUM RAW SUGAR LCE (cents/lbs)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	10.99	-	-	-	-	-
May	11.90	-	-	-	-	-
Jul	11.90	-	-	-	-	-
Total					-	-

■ WHITE SUGAR LCE ($/tonne)

	Sett price	Day's change	High	Low	Vol	Open int
May	377.7	+0.3	378.2	376.0	611	14,031
Aug	358.2	+1.2	358.5	357.0	438	7,141
Oct	322.8	+2.8	323.0	321.0	234	4,876
Dec	313.8	+1.0	-	-	-	2,589
Mar	309.2	+1.3	310.5	308.5	26	705
May	305.7	+0.2	-	-	-	534
Total					1,309	30,885

■ SUGAR "11" CSCE (112,000lbs; cents/lbs)

	Sett price	Day's change	High	Low	Vol	Open int
May	11.72	+0.02	11.74	11.53	4,987	61,578
Jul	10.87	+0.01	10.88	10.74	1,875	35,607
Oct	10.51	+0.01	10.54	10.38	308	27,547
Mar	10.24	-	10.28	10.16	140	14,188
May	10.16	+0.01	10.17	10.13	90	3,401
Jul	10.00	-	10.00	10.00	30	1,326
Total					7,430	144,081

■ COTTON NYCE (50,000lbs; cents/lbs)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	81.20	-0.28	82.05	81.30	131	185
May	82.30	-0.40	83.25	82.35	5,177	21,856
Jul	82.97	-0.52	83.90	82.93	1,272	11,767
Oct	81.25	+0.02	81.45	81.10	101	2,375
Dec	79.85	-0.10	80.15	79.85	654	17,115
Mar	80.83	-0.05	81.00	80.67	10	1,614
Total					7,345	57,670

■ ORANGE JUICE NYCE (15,000lbs; cents/lbs)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	130.70	+0.20	131.50	130.40	396	432
May	127.45	-0.35	128.20	127.40	887	12,390
Jul	126.40	-0.85	127.40	126.40	287	2,952
Sep	124.80	-0.65	125.00	124.80	118	1,968
Nov	121.80	-0.15	122.00	122.00	28	851
Jan	121.00	+0.05	121.50	121.50	69	2,417
Total					1,827	20,988

VOLUME DATA
Open interest and Volume data shown for contracts traded on COMEX, NYMEX, CBT, NYCE, CME and CSCE are one day in arrears.

INDICES

■ REUTERS (Base: 18/9/31=100)

Mar 5	Mar 4	month ago	year ago
2129.2	2128.6	2157.8	2325.8

■ CRB Futures (Base: 1967=100)

Mar 4	Mar 1	month ago	year ago
243.61	244.46	245.84	232.11

■ GSCI Spot (Base: 1970=100)

Mar 4	Mar 1	month ago	year ago
195.15	195.50	189.50	178.58

MEAT AND LIVESTOCK

■ LIVE CATTLE CME (40,000lbs; cents/lbs)

	Sett price	Day's change	High	Low	Vol	Open int
Apr	63.250	+0.525	63.825	62.250	7,240	32,651
Jun	63.400	+0.675	63.575	62.325	4,276	24,201
Aug	62.250	+0.225	62.575	61.900	1,363	11,732
Oct	63.425	+0.425	63.475	62.900	479	10,358
Dec	62.375	+0.350	62.475	61.950	330	5,538
Feb	62.400	+0.375	62.525	62.300	53	2,832
Total					13,748	87,558

■ LIVE HOGS CME (40,000lbs; cents/lbs)

	Sett price	Day's change	High	Low	Vol	Open int
Apr	48.275	-0.200	48.775	48.175	2,883	12,652
Jun	53.325	-0.425	53.950	53.300	1,412	11,597
Jul	51.425	-0.225	51.950	51.350	308	3,042
Aug	49.425	-0.325	49.900	49.350	289	3,941
Oct	45.825	-0.375	46.200	45.550	540	2,442
Dec	46.800	-0.300	47.200	46.800	159	1,580
Total					5,591	38,888

■ PORK BELLIES CME (40,000lbs; cents/lbs)

	Sett price	Day's change	High	Low	Vol	Open int
Mar	66.475	-0.600	67.000	65.850	1,481	1,830
May	66.550	-0.950	67.200	66.050	2,336	6,340
Jul	63.225	-0.750	63.900	63.000	704	1,992
Aug	59.325	-0.775	60.100	59.300	186	471
Feb	64.500	-1.200	65.400	64.800	17	20
Mar	64.100	-0.980	65.000	65.000	1	2
Total					4,725	10,665

LONDON TRADED OPTIONS

Strike price $ tonne — Calls — — Puts —

■ ALUMINIUM (99.7%) LME	May	Jul	May	Jul
1500	122	144	7	16
1600	51	78	35	47
1700	14	35	97	102
■ COPPER (Grade A) LME	**May**	**Jul**	**May**	**Jul**
2400	-	140	-	42
2500	87	83	87	84
2600	38	45	87	148
■ COFFEE LCE	**May**	**Jul**	**May**	**Jul**
1850	89	134	105	218
1900	70	118	136	250
1950	55	104	171	286
■ COCOA LCE	**May**	**Jul**	**May**	**Jul**
875	33	67	14	23
900	20	52	26	33
925	11	39	42	45
■ BRENT CRUDE IPE	**Apr**	**May**	**Apr**	**May**
1700	58	55	9	-
1750	40	39	26	-
1800	16	25	-	-

LONDON SPOT MARKETS

■ CRUDE OIL FOB (per barrel)

		+or-
Dubai	$16.26-6.34w	-0.031
Brent Blend (dated)	$18.64-8.66	+0.260
Brent Blend (Apr)	$17.69-7.71	+0.250
W.T.I.	$19.36-9.38w	+0.315

■ OIL PRODUCTS NWE prompt delivery CIF (tonne)

Premium Gasoline	$184-186	
Gas Oil	$169-171	+2
Heavy Fuel Oil	$99-100	-3.5
Naphtha	$167-169	
Jet fuel	$203-205	+3.5
Diesel	$171-173	-10

Petroleum Argus. Tel. London (0171) 359 8792

■ OTHER

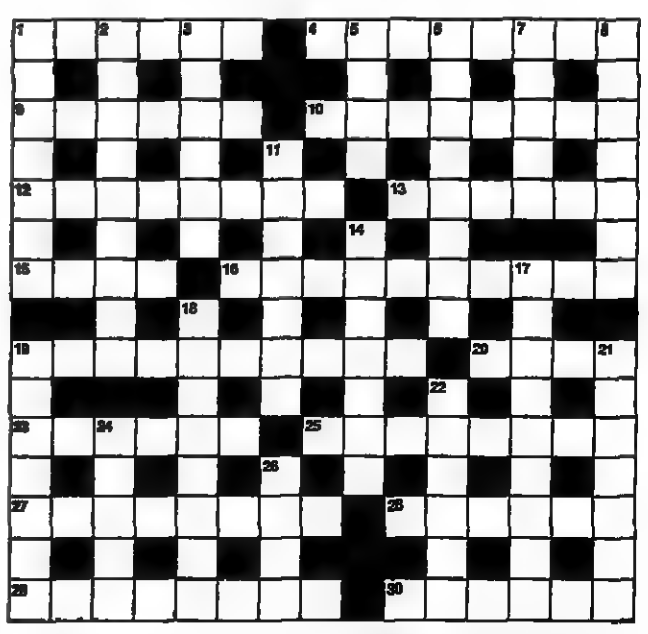
Gold (per troy oz)♣	$393.30	-0.50
Silver (per troy oz)♣	536.5c	-5.0
Platinum (per troy oz.)	$405.25	-5.25
Palladium (per troy oz.)	$132.25	-4.75
Copper	122.0c	
Lead (US prod.)	41.75c	
Tin (Kuala Lumpur)	15.70m	+0.08
Tin (New York)	288.50c	-2.00
Cattle (live weight)†	118.84	-1.54*
Sheep (live weight)†♠	133.02	-0.21*
Pigs (live weight)†	106.98	-0.09*
Lon. day sugar (raw)	$312.4	+2.6
Lon. day sugar (wte)	$366.0	+0.2
Barley (Eng. feed)	113.5	
Maize (US No3 Yellow)	150.5z	
Wheat (US Dark North)	Unq.	
Rubber (Apr)♥	109.50p	+0.25
Rubber (May)♥	109.50p	+0.25
Rubber (KL RSS No1)	409.50m	-2.50
Coconut Oil (Phil)§	$740.0v	
Palm Oil (Malay.)§	$507.5u	+2.5
Copra (Phil)§	470.0v	+5.0
Soyabeans (US)	208.0u	-4.0
Cotton Outlook 'A' index	82.70	-0.10
Wooltops (64s Super)	438p	

£ per tonne unless otherwise stated. p pence/kg. c cents/lb. r ringgit/kg. m Malaysian cents/kg. u Mar.♥ w Apr. y Feb/Mar. v Apr/May London Physical. § CIF Rotterdam. ♣ Bullion market close. ♠ Sheep (Live weight prices). * Change on week. †Prices are for previous week.

JOTTER PAD

CROSSWORD

No.9,011 Set by DANTE



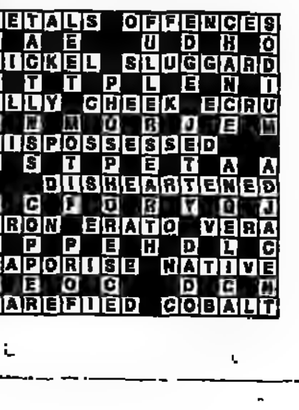
ACROSS

1 Lehar composition about love set in Pakistan (6)
4 Highflier's pranks (8)
9 This French rebel is a red (6)
10 Notice fewer without blemish (8)
12 Struggle in which the Services prove decisive (3-5)
13 Snooker on the green? (6)
15 Note goes to small house in part of London (4)
16 I'm in prison without money, that's the snag (10)
19 Nepal organised equipment for mountain staff (10)
20 Not a cheap term of affection (4)
23 Readjusts his car seats (6)
25 Liking for a swansong (8)
27 Is it dealt with at the end of a medical textbook? (8)
28 Not one on view (6)
29 Young female accompanist (8)
30 Attitude a driver may take, of course (6)

DOWN

1 Places drawn roughly to scale (7)
2 Chastise wanton whores with it (9)
3 Stay outside or go (6)
5 H.G. Wells hero, we hear, sleeps (4)
6 Permit one journey if you don't check the speed (3,2,3)
7 Discharge of ambassador in strange circumstances....(5)
8 ....his guilt is a possibility (7)
11 Like a hand? Get a couple of friends (7)
14 Washed up when everyone was in bed (7)
17 The Spanish girl, putting it back on, achieves uplift (9)
18 Arrival of actor on stage to produce delight (8)
19 Bill includes a broken chair that's antique (7)
21 Regret about arranging it en suite (7)
22 Current charge for what solicitors do (6)
24 First-class letter (5)
26 Take hat round beach near Venice (4)

Solution 9,010



INTERNATIONAL CAPITAL MARKETS

Traders torn between conflicting signals

By Samer Iskandar in London and Lisa Bransten in New York

Government bond markets lacked inspiration yesterday, as traders were torn between conflicting signals from both sides of the Atlantic.

With US economic activity appearing stronger than previously believed, a rate cut by the Federal Reserve seems increasingly unlikely.

In the UK, the mood was more positive following comments by Mr Eddie George, the governor of the Bank of England, after a board meeting of the European Monetary Institute in Frankfurt.

Mr George said he was "quite encouraged by the prospects after the last inflation report," which some observers took as a hint that conditions were ripe for a cut in British rates.

■ US Treasury prices gave up some of the gains made on Friday and Monday in early trading on a combination of profit-taking and worries about the strength of the economy.

Near midday, the benchmark 30-year Treasury was down $\frac{2}{32}$ at 94¾, to yield 6.391 per cent, and the two-year note was $\frac{1}{32}$ lower at 99$\frac{11}{32}$, yielding 5.276 per cent.

The fact that the yield on two-year notes rose above the federal funds target rate of 5¼ per cent was a sign that investors do not expect the Federal Reserve to lower interest rates at the March 26 meeting of its Open Market Committee.

The market also interpreted comments from Mr Alan Greenspan, the Fed chairman, as a signal that monetary policy would remain steady. Mr Greenspan told the Independent Bankers Association of America that some indicators may be understating US economic growth.

Over the past two weeks, the Wall Street consensus on whether the Fed would lower rates has been in flux, leading to volatile trading and sharp swings in the shape of the yield curve. Yesterday, the yield curve flattened to 112 basis points from 116 points late on Monday.

GOVERNMENT BONDS

■ UK government bonds were driven by international markets yesterday, as volumes and volatility remained subdued, while traders waited for a widely-expected cut in UK official interest rates.

However, gilts underperformed the US and major continental European markets. Liffe's June 10-year gilt future closed at 107$\frac{1}{32}$, down ½. Ten-year spreads widened by 4 basis points to 192 points over Treasuries, and by 3 basis points to 163 points over bunds.

Mr Don Smith, UK economist at HSBC, believes this underperformance is "in part redressing the outperformance of the last few weeks." He is convinced there will be a rate cut, but warns of "more downside risk than upside potential", since he considers the next easing to be largely reflected in current prices.

■ German bunds opened lower and extended losses during the afternoon in the wake of falling US Treasuries, but also suffered from rumours, later denied by the Bundesbank, that revised M3 money supply growth in January could be much higher than the provisional figure of 8.4 per cent.

The March 10-year bund future closed at 97.65, down 0.32. In the cash market, the German yield curve steepened slightly as the 10-year yield rose by 6 basis points to 6.33 per cent.

"Trading in bunds is purely technical," said a floor trader on Liffe. He warned of potentially high volatility if this week's unemployment and GDP figures, due out today and tomorrow respectively, diverge from expectations.

■ French bonds were relatively well supported in the unstable international environment. The yield curve steepened slightly as short rates drifted lower and longer maturities remained almost unchanged.

Matif's March 10-year bond future closed at 121.86, down 0.02, and the March three-month Pibor contract settled at 95.67, up 0.05. In the cash market, the 10-year yield was up one basis point at 6.56 per cent, and the 10-year spread over German bunds tightened by 4 basis points to 24 points.

The main factors supporting OATs were the strength of the French franc and a fall in overnight interest rates.

"This revived hopes of a cut in official rates on Thursday," said Ms Nathalie Fillet, a bond strategist at Paribas in Paris.

Some analysts are more cautious and believe the next rate cut is already priced into the market, but Ms Fillet is confident that even if there is no easing this week, "a rate cut is still on the cards".

■ Spanish bonds continued to fall, as the central bank left rates unchanged.

"Market participants who were expecting a monetary easing immediately after [last Sunday's] election now realise the Bank of Spain will not act before the political uncertainty is over, and that could take days," said an institutional bond investor.

The March futures contract on 10-year Bonos closed at 94.10, down 0.42 but observers believed the recent correction was "overdone ... and unlikely to go much further".

Kvaerner raises £450m bridge loan for Trafalgar bid

By Antonia Sharpe

Kvaerner, the Norwegian engineering and shipbuilding group which has made an agreed £904m takeover bid for Trafalgar House of the UK, has become the latest company to raise acquisition financing in the international syndicated loans market.

SYNDICATED LOANS

Four banks – Chemical, Den norske Bank, Enskilda, and SBC Warburg (which advised Kvaerner on the takeover) – are providing Kvaerner with a two-year "bridge" loan of £450m. Details will be disclosed in the offer document, which is likely to be published early next week.

Even though the bid is not hostile and the banks are lending directly to Kvaerner, rather than a special-purpose vehicle – as was the case in some of the takeovers of UK regional electricity companies – the interest margin on the loan is expected to be well in excess of that on a similar-sized facility Kvaerner took out last year.

The old loan pays 25 basis points over London interbank offered rate. On the new loan, the leveraged nature of the Trafalgar House purchase, the asset disposals involved and the short life of the loan suggest Kvaerner will have had to agree to an interest margin in the high 30s.

The arrangers of the loan are expected to go straight to general syndication, because a sub-underwriting stage is not necessary due to its size.

News that the proposed merger between MAI, the UK television and financial services group, and United News & Media, owner of Express Newspapers, will not be referred to the Monopolies and Mergers Commission means the £535m and $255m three-year facilities arranged by Chemical and Lloyds for the new group can proceed. The two facilities, which carry margins of 27.5 basis points over Libor, are likely to be underwritten in the next few days.

Although acquisition financing has dominated the syndicated loans market in recent months, there has been a steady flow of corporate lending, mainly for refinancing.

Rank Xerox, the office equipment supplier, yesterday said it had asked Banque Nationale de Paris, NatWest Capital Markets and Union Bank of Switzerland to arrange a £400m five-year revolving credit facility. The facility fee and margin over Libor have been set at 7.5 basis points each, and there is a utilisation fee of 2.5 points.

The other notable corporate facility in the past week was a DM1bn seven-year revolving credit for Preussag, the German metals and engineering group. Like Rank Xerox, the facility fee and the margin over Libor have been set at 7.5 basis points each. Utilisation fees range from zero to 4 per cent. The arranger is WestLB and Preussag's relationship banks will be invited into the loan. Bankers said it was refreshing to see WestLB win a big loan from corporate Germany, the preserve of Deutsche Bank and J.P. Morgan, in recent times.

A $350m five-year amortising loan for Investcorp, the Bahrain-based investment group, is now in general syndication. The original group of arrangers – Bankers Trust, Bank of Tokyo, Chemical, Credit Suisse, NatWest, Société Générale and WestLB – has been expanded to include another nine banks.

Successful $200m debut for Norwegian telecoms group

By Conner Middelmann

Telenor, the Norwegian state-owned telecommunications company, made a successful eurobond debut yesterday with $200m of five-year bonds.

The paper was priced to yield 24 basis points over Treasuries, 3 basis points below outstanding bonds issued by the UK's National Grid. Despite that somewhat aggressive pricing, the issue attracted strong demand from investors seeking exposure to the telecommunications sector and Norwegian risk.

"Norwegian entities are very infrequent borrowers on the eurobond market," said one dealer.

Lead manager J.P. Morgan said it sold all the bonds by the time they were priced, and reported a mix of institutional and retail demand in Europe and east Asia.

After weeks of preparation, the Inter-American Development Bank launched its $1bn 10-year global issue yesterday. It was priced at 29 basis points over Treasuries, 2 to 2½ basis points over the World Bank's 10-year benchmark and 2 basis points below the Asian Development Bank's last 10-year issue.

INTERNATIONAL BONDS

According to lead managers Merrill Lynch and SBC Warburg, some 35 per cent of their allocation went to North and South America, 30 per cent to investors in the UK and Europe, 26 per cent to Japan and the rest to non-Japan Asia.

"We have achieved our major strategic objectives: broad distribution and good pricing, and expect an optimal secondary market performance," said Mr Saul Hanono, the bank's chief of funding.

Switching into the IDB issue from existing eurobonds helped push spreads in the secondary market out by about 2 basis points in the 10-year sector and 1 basis point in five-years, dealers said.

Also weighing on secondary spreads has been the high cost of borrowing 10-year Treasuries in the repo market as a hedge against long eurobond positions. Due to a lack of stock, 10-year dollar repo rates have fallen from around 5¼ per cent last week to about 1½ per cent, leading to a sharp rise in borrowing costs. "This makes traders reluctant to be long stock, so they've been selling it and that's causing spreads to widen," said a dealer.

● Yorkshire Water, the UK utility, yesterday announced that it is repurchasing its 6.75 per cent convertible bonds due 2008 at a price of 112, via James Capel and Cazenove.

● Standard & Poor's has assigned a B+ rating to Brazil's Y30bn five-year samurai issue which was launched on Monday and said its outlook on Brazil's rating is positive.

NEW INTERNATIONAL BOND ISSUES

Borrower	Amount m.	Coupon %	Price	Maturity	Fees %	Spread bp	Book-runner
US DOLLARS							
Inter-American Dev'ment Bank	1bn	6.125#	99.117R	Mar 2006	0.325R	+29(5⅝%-06)	Merrill Lynch/SBC Warburg
Telenor	200	5.75	99.563R	Mar 2001	0.275R	+24(5⅝%-01)	JP Morgan Securities
Loxley(a)§	110	2.50	100.00	Apr 2001	2.50	-	Jardine Fleming
Banco Safra(b)	100	9.00#	99.85R	Mar 2004	0.875R	+337(5⅝%-99)	UBS
Swedish Export Credit	100	5.00#	100.025	Mar 1997	0.05	-	Lehman Brothers Intl
Kyo Midori(c)ф	94.75	2.625	100.00	Mar 2000	2.25	-	Mitsubishi Finance Intl
D-MARKS							
BNG	300	4.25	99.61R	Apr 1999	0.1875R	+12(5¾%-99)	ABN Amro/Goldman Sachs
SWISS FRANCS							
UPS of America(s)	200	3.25	102.15	Oct 1999	1.50	-	Merrill Lynch Capital Mkts
GUILDERS							
Waterschapsbank	250	6.375	99.17R	Mar 2006	0.325R	+20(5%-06)	ABN Amro Hoare Govett
LUXEMBOURG FRANCS							
City of Copenhagen	2bn	6.625	102.30	Apr 2006	2.00	-	BCEE/BIL
AUSTRALIAN DOLLARS							
National Australia Bank(d)	100	8.00	100.775	Apr 2001	2.00	-	Hambros Bank
ECU							
Crédit Local de France(e)	50	6.25	98.288R	Dec 1999	0.225R	+40(5%-99)	Morgan Stanley & Co Intl

Final terms, non-callable unless stated. Yield spread (over relevant government bond) at launch supplied by lead manager. §Convertible. фWith equity warrants. #Semi-annual coupon. R: fixed re-offer price; fees shown at re-offer level. a) Conversion price: baht 450. FX: 25.2 baht/$. Redemption price: 127.25%. Callable from 1/4/99, subject to 140% rule, at accreted value. b) Callable and puttable on 26/3/99 & 26/3/01 at 99% & 99½% respectively. c) Warrants exercisable into shares of Nidec Corp. Fixing: 12/3/96. d) A$100 launched 20/2/96 was increased to A$200m. e) Fungible with Ecu400m. Plus 95 days accrued. s) Short 1st coupon.

WORLD BOND PRICES

BENCHMARK GOVERNMENT BONDS

		Coupon	Red Date	Price	Day's change	Yield	Week ago	Month ago
Australia		10.000	02/06	110.4150	-0.500	8.44	8.72	8.02
Austria		6.125	02/06	97.4900	-0.160	6.47	6.63	6.13
Belgium		7.000	05/06	101.7100	-0.190	6.76	6.90	6.30
Canada *		8.750	12/05	109.4700	+0.010	7.37	7.52	7.12
Denmark		8.000	03/06	103.4800	-0.180	7.49	7.71	6.80
France	BTAN	7.000	10/00	105.6250	-0.250	5.68	5.77	5.41
	OAT	7.250	03/06	104.8000	-0.260	6.59	6.74	6.38
Germany Bund		6.000	01/06	97.8100	-0.340	6.33	6.42	5.85
Ireland		8.000	08/06	101.5700	-0.230	7.76	7.89	7.24
Italy		10.500	09/05	102.4100	+0.690	10.10†	10.45	10.03
Japan	No 129	6.400	03/00	116.9010	+0.360	1.88	2.10	1.71
	No 182	3.000	09/05	98.4320	+0.036	3.22	3.21	2.97
Netherlands		6.000	01/06	97.7300	-0.310	6.31	6.41	5.85
Portugal		11.875	02/05	113.0000	-0.120	9.64	9.58	9.21
Spain		10.150	01/06	100.8600	-0.440	9.90	9.71	9.45
Sweden		6.000	02/05	82.0100	-0.950	9.02	8.87	8.25
UK Gilts		8.000	12/00	103-28	-5/32	7.03	7.21	6.70
		7.500	12/06	97-22	-12/32	7.82	7.96	7.38
		9.000	10/08	108-05	-14/32	7.98	8.07	7.54
US Treasury *		5.625	02/06	97-11	-8/32	5.98	6.05	5.69
		6.000	02/26	94-21	-14/32	6.40	6.47	6.10
ECU (French Govt)		7.500	04/05	103.3500	+0.200	6.99	7.23	6.71

London closing, *New York mid-day. Yields: Local market standard.
† Gross (including withholding tax at 12.5 per cent payable by nonresidents)
Prices: US, UK in 32nds, others in decimal. Source: MMS International

US INTEREST RATES

Latest		Treasury Bills and Bond Yields			
		One month	5.13	Two year	5.29
Prime rate	8¼	Two month	5.04	Three year	5.41
Broker loan rate	7	Three month	5.03	Five year	5.62
Fed.funds	5¼	Six month	5.02	10-year	5.97
Fed funds at intervention.	-	One year	5.08	30-year	6.39

BOND FUTURES AND OPTIONS

France

■ NOTIONAL FRENCH BOND FUTURES (MATIF) FFr500,000

	Open	Sett price	Change	High	Low	Est. vol.	Open int.
Mar	122.10	121.96	+0.16	122.26	121.82	116,759	123,658
Jun	122.10	121.82	+0.10	122.26	121.80	21,878	33,498
Sep	120.90	120.62	+0.10	121.02	120.72	197	2,395

■ LONG TERM FRENCH BOND OPTIONS (MATIF)

Strike Price	CALLS Apr	CALLS May	CALLS Jun	PUTS Apr	PUTS May	PUTS Jun
119	-	-	-	0.10	0.26	0.50
120	2.05	-	2.60	0.19	-	0.72
121	-	-	1.86	0.09	0.74	1.04
122	0.66	1.03	1.33	0.77	1.15	1.45
123	0.27	0.60	0.95	-	-	-

Est. vol. total. Calls 24,315 Puts 12,416. Previous day's open int., Calls 131,005 Puts 121,071

Germany

■ NOTIONAL GERMAN BUND FUTURES (LIFFE)* DM250,000 100ths of 100%

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Mar	98.28	97.65	-0.32	98.30	97.54	124371	64078
Jun	97.43	96.78	-0.35	97.46	96.68	205147	190771

■ BUND FUTURES OPTIONS (LIFFE) DM250,000 points of 100%

Strike Price	CALLS Apr	CALLS May	CALLS Jun	CALLS Sep	PUTS Apr	PUTS May	PUTS Jun	PUTS Sep
9650	0.78	1.13	1.34	1.30	0.60	0.85	1.06	1.86
9700	0.51	0.85	1.07	1.07	0.73	1.09	1.29	2.12
9750	0.30	0.63	0.85	0.87	1.02	1.35	1.55	2.42

Est. vol. total, Calls 16539 Puts 23803. Previous day's open int., Calls 253224 Puts 161427

Italy

■ NOTIONAL ITALIAN GOVT. BOND (BTP) FUTURES (LIFFE)* Lira 200m 100ths of 100%

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Mar	111.72	111.42	-0.06	111.99	111.31	10496	9875
Jun	111.40	110.62	-0.43	111.57	110.60	46356	43102

■ ITALIAN GOVT. BOND (BTP) FUTURES OPTIONS (LIFFE) Lira200m 100ths of 100%

Strike Price	CALLS Jun	CALLS Sep	PUTS Jun	PUTS Sep
11050	2.06	2.64	1.94	2.92
11100	1.80	2.41	2.18	3.19
11150	1.56	2.20	2.44	3.48

Est. vol. total, Calls 4308 Puts 1649. Previous day's open int., Calls 47262 Puts 42285

Spain

■ NOTIONAL SPANISH BOND FUTURES (MEFF)

	Open	Sett price	Change	High	Low	Est. vol.	Open int.
Mar	94.90	94.08	-0.42	95.14	93.81	79,606	47,127
Jun	94.50	93.75	-0.45	94.53	93.32	3,823	7,281

UK

■ NOTIONAL UK GILT FUTURES (LIFFE)* £50,000 32nds of 100%

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Mar	108-16	107-28	-0-16	108-23	107-27	21092	51728
Jun	107-23	107-03	-0-16	107-31	107-00	66274	97159

■ LONG GILT FUTURES OPTIONS (LIFFE) £50,000 64ths of 100%

Strike Price	CALLS Apr	CALLS May	CALLS Jun	CALLS Sep	PUTS Apr	PUTS May	PUTS Jun	PUTS Sep
107	0-56	1-25	1-48	2-08	0-60	1-20	1-42	2-52
108	0-28	0-61	1-17	1-44	1-22	1-56	2-11	3-26
109	0-12	0-38	0-57	1-21	2-06	2-32	2-51	4-03

Est. vol. total. Calls 2954 Puts 2548. Previous day's open int., Calls 36939 Puts 24415

Ecu

■ ECU BOND FUTURES (MATIF) ECU100,000

	Open	Sett price	Change	High	Low	Est. vol.	Open int.
Mar	90.78	90.60	+0.48	90.88	90.50	2,622	7,609
Jun	90.14	90.06	+0.46	90.26	90.02	566	1,939

US

■ US TREASURY BOND FUTURES (CBT) $100,000 32nds of 100%

	Open	Latest	Change	High	Low	Est. vol.	Open int.
Mar	116-21	116-03	+0-02	116-22	115-26	30,548	121,807
Jun	116-05	115-18	+0-01	116-08	115-09	233,805	253,094
Sep	115-08	114-30	-	115-08	114-24	137	14,369

Japan

■ NOTIONAL LONG TERM JAPANESE GOVT. BOND FUTURES (LIFFE) Y100m 100ths of 100%

	Open	Close	Change	High	Low	Est. vol	Open int.
Mar	119.98	-	-	120.05	119.98	265	0
Jun	118.72	-	-	118.72	118.60	2214	0

* LIFFE futures also traded on APT. All Open interest figs. are for previous day.

FT-ACTUARIES FIXED INTEREST INDICES

Price Indices UK Gilts	Tue Mar 5	Day's change %	Mon Mar 4	Accrued interest	xd adj. ytd		Low coupon yield Mar 5	Mar 4	Yr. ago	Medium coupon yield Mar 5	Mar 4	Yr. ago	High coupon yield Mar 5	Mar 4	Yr. ago
1 Up to 5 years (23)	122.82	-0.01	122.84	2.18	1.88	5 yrs	7.13	7.11	8.75	7.17	7.15	8.78	7.28	7.23	8.84
2 5-15 years (20)	148.21	-0.16	148.45	2.93	1.21	15 yrs	8.03	8.01	8.68	8.05	8.01	8.80	8.16	8.12	9.03
3 Over 15 years (9)	161.60	-0.36	162.18	2.22	2.52	20 yrs	8.13	8.12	8.62	8.13	8.09	8.80	8.24	8.20	8.95
4 Irredeemables (6)	186.82	+0.38	186.12	3.85	0.00	Irred.†	8.17	8.20	8.61						
5 All stocks (58)	143.07	-0.14	143.27	2.88	1.57										

Index-linked	Tue Mar 5	Day's change %	Mon Mar 4	Accrued interest	xd adj. ytd		Inflation 5% Mar 5	Mar 4	Yr. ago	Inflation 10% Mar 5	Mar 4	Yr. ago
6 Up to 5 years (1)	196.90	+0.02	196.86	3.16	0.00	Up to 5 yrs	2.79	2.79	3.76	1.62	1.62	2.43
7 Over 5 years (11)	185.22	+0.09	185.06	1.14	0.63	Over 5 yrs	3.72	3.72	3.95	3.62	3.62	3.76
8 All stocks (12)	185.35	+0.09	185.19	1.16	0.62							

Average gross redemption yields are shown above. Coupon Bands: Low: 0%-7¾%; Medium: 8%-10¾%; High: 11% and over. † Flat yield. ytd Year to date.

FT FIXED INTEREST INDICES

	Mar 5	Mar 4	Mar 1	Feb 29	Feb 28	Yr ago	High*	Low*
Govt. Secs. (UK)	93.86	93.90	93.56	93.05	93.31	90.35	96.34	90.22
Fixed Interest	112.15	112.14	112.01	111.82	111.91	108.77	115.23	108.77

* for 1995/96. Government Securities high since compilation: 127.40 (9/1/35), low 49.18 (3/1/75). Fixed Interest high since compilation: 133.87 (21/1/94), low 50.53 (3/1/75). Basis 100: Government Securities 15/10/26 and Fixed Interest 1928. SE activity indices rebased 1974.

GILT EDGED ACTIVITY INDICES

	Mar 4	Mar 1	Feb 29	Feb 28	Feb 27
Gilt Edged bargains	106.1	72.0	104.8	108.5	93.7
5-day average	97.0	99.9	102.1	102.1	102.4

FT/ISMA INTERNATIONAL BOND SERVICE

Listed are the latest international bonds for which there is an adequate secondary market. Latest prices at 7:10 pm on March 5

	Issued	Bid	Offer	Chg.	Yield
U.S. DOLLAR STRAIGHTS					
Abbey Natl Treasury 6½ 03	1000	101	101¼	-⅛	6.32
ABN Amro Bank 7¼ 05	1000	104¾	105		6.65
Alcan Dev Bk 7⅛ 23	500	102	102½	-⅛	7.20
Sweden 8 97	2500	105½	105⅝		3.85
United Kingdom 7¼ 97	5500	105⅝	105⅝	-⅛	3.68
Volkswagen Intl Fin 7 03	1000	103	103¼		6.46
World Bank 0 15	2000	29¼	29¾		6.43
Abbey Natl Treasury 8 03 £	1000	99⅞	100	-¼	8.02
Alliance Leics 11⅜ 97 £	100	105½	105¾		6.53
British Land 8⅞ 23 £	150	90¼	90⅞	-½	10.17
Denmark 6⅞ 98 £	800	100	100¼		6.72

[illegible]

STRAIGHT BONDS: The yield is the yield to redemption of the bid-price; the amount issued is in millions of currency units. Chg. day=Change on day.
FLOATING RATE NOTES: Denominated in dollars unless otherwise indicated. Coupon shown is minimum. Spread=Margin above six-month offered rate (three-month above mean rate) for US dollars. C.cpn=The current coupon.
CONVERTIBLE BONDS: Denominated in dollars unless otherwise indicated. Cnv. price=Nominal amount of bond per share expressed in currency of share at conversion rate fixed at issue. Prem=Percentage premium of the current effective price of acquiring shares via the bond over the most recent price of the shares.

UK GILTS PRICES

	Notes	Yield Int	Yield Red	Price £	+ or -	52 week High	52 week Low
Shorts" (Lives up to Five Years)							
Treas 15¼pc 1996‡‡		15.02	5.94	101⅜	-⅛	108⅝	101⅜
Exch 13¼pc 1996‡‡		13.07	5.86	101⅜	-⅛	106⅜	101⅜
Conversion 10pc 1996		9.74	5.85	102⅝		104⅜	102⅛
Treas 13¼pc 1997‡‡		12.47	5.85	106⅛		109⅜	106⅛
Exch 10½pc 1997		10.08	5.87	104⅛		105⅜	104⅛
Treas Cnv 7pc 1997‡‡		6.91	[illegible]	101¼		101⅜	97½
Treas 8¾pc 1997‡‡		8.43	6.05	103¾		104⅛	100⅜
Treas 8½pc 2005‡‡		8.11	7.78	104⅝	-⅛	108⅛	99⅜
Treas 7½pc 2006‡‡		7.67	7.81	97¾	-⅛	101⅜	94⅜
Treas 7¾pc 2006‡‡		7.82	7.87	99¼xd	-¼	103¼	93⅛
Treas 8pc 2002-6‡‡		7.94	7.90	100¾	-⅛	104⅜	94⅜
Treas 11¾pc 2003-7		9.65	7.62	121¾	-⅛	125⅛	114⅜
Treas 8½pc 2007‡‡		8.14	7.91	104⅓	-¼	108⅜	98⅛
Treas 13½pc 2004-8		10.05	7.69	134⅜	-⅛	139⅜	127⅛

Index-Linked	Notes (b)	(1)	Yield (2)	Price £	+ or -	52 week High	52 week Low
2pc '96	(67.9)	-	0.85	216⅜		216⅝	204⅜
4⅝pc '98‡‡	(135.6)	1.53	2.79	111⅜		113⅜	107⅜
2½pc '01	(78.3)	3.03	3.53	177⅛	+⅛	180⅛	166⅜
2½pc '03	(78.8)	3.20	3.59	172⅜	+⅛	178⅛	162⅜
4⅜pc '04‡‡	(135.6)	3.24	3.60	113⅜	+⅛	116⅜	108⅜
2pc '06	(69.5)	3.35	3.62	181¼	+⅛	185⅜	168⅞
2½pc '09	(78.8)	3.45	3.68	162⅜	+⅛	167¾	152⅞

[illegible]

• "Tap" stock. ‡‡ Tax-free to non-residents on application. E Auction basis. xd Ex dividend. Closing mid-prices are shown in pounds per £100 nominal of stock. Prospective real Index-Linked redemption yields are calculated by HSBC Greenwell from Bank of England closing prices.

CURRENCIES AND MONEY

MARKETS REPORT

Dollar dawdles as markets seek fresh direction

By Philip Gawith

Currency markets had an uneventful day yesterday in the absence of any fresh developments or established trends to trade off.

If anything, the D-Mark had a slightly weaker bias, but for the most part currencies stayed within their recent ranges.

The dollar finished in London at DM1.4789, from DM1.4758. Against the yen it closed at Y105.125, from Y105.14.

The slightly weaker D-Mark helped stabilise the peseta, despite the continued weak performance of Spanish asset markets following the indecisive weekend election result. The peseta finished at Pta84.68 against the D-Mark, from Pta84.75. The lira was unable to continue its recent rally, and closed unchanged at L1,050 against the D-Mark.

Elsewhere in Europe the Swedish Riksbank cut the repo rate to 7.85 per cent, from 8.05 per cent. The krona finished marginally weaker against the D-Mark, at SKr4.63, from SKr4.625.

Sterling had an uneventful day, closing at DM2.2594, from DM2.2553. Against the dollar it closed at $1.5278, from $1.5282.

■ After a period of interest rate pessimism in Europe, the pendulum appears to be swinging back again. A key element of this picture will be the release today of the German unemployment data. Markets are braced for the worst, with expectations of a new unadjusted record in February. Meanwhile, fourth quarter GDP figures, due tomorrow, are expected to show the economy shrinking slightly.

■ Pound in New York

Mar 5	Latest	Prev. close
£ spot	1.5295	1.5275
1 mth	1.5284	1.5264
3 mth	1.5265	1.5245
1 yr	1.5179	1.5158

These data will encourage talk of a further cut in German interest rates, which prospect is undermining the D-Mark. Mr Adrian Cunningham, senior currency economist at UBS in London, said: "There is not so much independent high-yielding currency strength at the moment as antipathy towards the D-Mark."

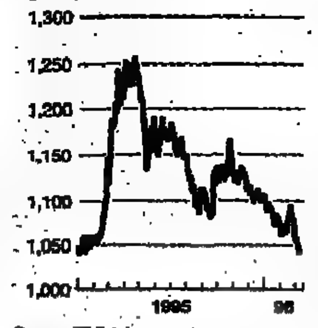
He said the German currency was suffering from the perception that the economy was doing worse than the government would admit.

He predicted it would be at least another three months before the market concluded that the German interest rate cycle had reached a trough.

Mr Julian Jessop, economist at HSBC Markets in London, said it remained their view that there would be at least one more cut in interest rates. He said the most likely date for a decision would be the March 28 meeting of the Bundesbank council. History suggests the cut will be 50 basis points. Mr Jessop points out that 57 of the last 60 discount rate cuts, going back to 1969, have been the full half-point.

D-Mark

Against the lira (L per DM)



Source: FT Extel

■ One factor that may well have prevented the D-Mark slipping further has been the inability of the dollar to sustain its recovery.

Economists at Deutsche Morgan Grenfell in London argue that the dollar has a better chance of moving higher against the D-Mark, which has weak economic data to contend with, than the yen, which is supported by anticipated capital flows back into Japan at the financial year-end.

They point out that the Jusen bail-out could have a bearing on capital flows: "If the government, as is now expected, accepts a share of future bank profits in lieu of a more significant up front cash contribution, this may help to mitigate some of the concerns...that banks would be forced to liquidate more overseas assets to cover their share of the bail out."

■ The cut in the Swedish repo rate was the fifth cut this year, in which time the rate has fallen from 8.91 per cent.

The consensus view among economists is that the rate will fall to around 6.5 per cent by the end of the year, although there are some observers who believe it could fall below 6 per cent. The Riksbank fuelled optimism with a very bullish inflation report on Monday.

Mr Malcolm Barr, economist at Chemical Bank in London, said the nervousness concerning the krona yesterday had been more to do with the road haulage strike, and fears that it might escalate, than Riksbank policy.

He said the sedate performance of the peseta, which traded only in a 34 basis point range, was indicative of the sluggish state of the markets. "It takes quite a lot of news to get the markets moving." In the past, he said, the ambiguous election result could have been expected to generate much more price action.

■ OTHER CURRENCIES

Mar 5	£	$
Czech Rp	41.5331 - 41.5674	27.1929 - 27.2029
Hungary	216.814 - 216.980	141.950 - 142.000
Iran	4584.30 - 4582.20	3000.00 - 3001.00
Kuwait	0.4562 - 0.4567	0.2987 - 0.2989
Poland	3.9254 - 3.9303	2.5700 - 2.5720
Russia	7358.50 - 7369.71	4822.00 - 4825.00
U.A.E.	5.6088 - 5.6129	3.6728 - 3.6731

POUND SPOT FORWARD AGAINST THE POUND

Mar 5		Closing mid-point	Change on day	Bid/offer spread	Day's Mid high	Day's Mid low	One month Rate	One month %PA	Three months Rate	Three months %PA	One year Rate	One year %PA	Bank of Eng. Index
Europe													
Austria	(Sch)	15.8883	+0.0282	804 - 961	15.9118	15.8701	15.8583	2.3	15.7758	2.8	-	-	105.8
Belgium	(BFr)	46.4375	+0.0871	162 - 588	46.5030	46.2800	46.3325	2.7	46.1325	2.6	45.2725	2.5	108.1
Denmark	(DKr)	8.7281	+0.0158	239 - 323	8.7386	8.7120	8.7161	1.6	8.698	1.5	8.5959	1.6	109.1
Finland	(FM)	7.0117	+0.0254	051 - 183	7.0250	6.9840	7.0073	0.8	6.9992	0.7	-	-	84.0
France	(FFr)	7.7395	+0.0088	366 - 424	7.7546	7.7260	7.7273	1.9	7.7065	1.6	7.6298	1.4	109.3
Germany	(DM)	2.2594	+0.0041	583 - 604	2.2640	2.2557	2.2533	3.2	2.2444	2.7	2.2015	2.6	110.1
Greece	(Dr)	368.654	-0.735	485 - 822	371.190	368.294	-	-	-	-	-	-	66.4
Ireland	(I£)	0.9729	+0.0017	722 - 736	0.9740	0.9717	0.9718	1.2	0.9705	1.0	0.9666	0.7	97.8
Italy	(L)	2372.02	+3.75	051 - 352	2373.93	2364.24	2379.57	-3.8	2395.22	-3.9	2454.07	-3.5	74.5
Luxembourg	(LFr)	46.4375	+0.0871	162 - 588	46.5030	46.2800	46.3325	2.7	46.1325	2.6	45.2725	2.5	108.1
Netherlands	(Fl)	2.5295	+0.0058	282 - 307	2.5334	2.5267	2.5234	2.9	2.5112	2.9	2.463	2.6	108.2
Norway	(NKr)	9.8350	+0.0147	270 - 430	9.8887	9.7838	9.827	1.0	9.8126	0.9	9.7549	0.8	98.9
Portugal	(Es)	234.449	+0.176	288 - 609	234.823	234.278	234.874	-2.2	235.779	-2.3	-	-	95.1
Spain	(Pta)	191.313	+0.189	231 - 395	191.561	190.681	191.733	-2.6	192.588	-2.7	195.688	-2.3	81.3
Sweden	(SKr)	10.4597	+0.0257	526 - 667	10.4810	10.3610	10.4611	-0.2	10.4641	-0.2	10.4725	-0.1	88.2
Switzerland	(SFr)	1.8366	+0.0004	355 - 374	1.8399	1.8338	1.8309	4.3	1.8168	4.3	1.7649	3.9	113.7
UK	(£)	-	-	-	-	-	-	-	-	-	-	-	83.6
Ecu	-	1.2163	-0.0015	156 - 186	1.2177	1.2147	1.2149	1.4	1.2122	1.3	1.2003	1.3	-
SDR†	-	1.04366	-	-	-	-	-	-	-	-	-	-	-
Americas													
Argentina	(Peso)	1.5276	-0.0003	271 - 281	1.5290	1.5257	-	-	-	-	-	-	-
Brazil	(R$)	1.5022	-0.0004	018 - 027	1.5034	1.5001	-	-	-	-	-	-	-
Canada	(C$)	2.0942	-0.0015	933 - 950	2.0960	2.0893	2.0926	0.9	2.0898	0.8	2.0799	0.7	83.3
Mexico	(New Peso)	11.5842	+0.0167	777 - 906	11.5913	11.5541	-	-	-	-	-	-	-
USA	($)	1.5278	-0.0004	274 - 281	1.5292	1.5259	1.5266	0.9	1.525	0.7	1.5162	0.8	95.6
Pacific/Middle East/Africa													
Australia	(A$)	2.0111	-0.0004	100 - 122	2.0170	2.0095	2.016	-1.1	2.0178	-1.3	2.0411	-1.5	89.7
Hong Kong	(HK$)	11.8123	-0.003	088 - 157	11.8230	11.7987	11.8018	1.1	11.7895	0.8	11.7445	0.6	-
India	(Rs)	51.6609	-0.7641	261 - 956	52.2780	51.6220	-	-	-	-	-	-	-
Israel	(Shk)	4.7445	+0.0013	395 - 490	4.7492	4.7392	-	-	-	-	-	-	-
Japan	(Y)	160.605	-0.07	530 - 680	161.080	160.330	159.94	5.7	158.65	5.6	152.465	5.1	138.4
Malaysia	(M$)	3.8859	-0.0049	842 - 875	3.8903	3.8836	-	-	-	-	-	-	-
New Zealand	(NZ$)	2.2625	-0.0074	611 - 639	2.2701	2.2580	2.2663	-2.0	2.2795	-3.0	2.3133	-2.2	105.7
Philippines	(Peso)	40.0042	+0.0112	797 - 286	40.0290	39.9710	-	-	-	-	-	-	-
Saudi Arabia	(SR)	5.7295	-0.002	279 - 311	5.7347	5.7229	-	-	-	-	-	-	-
Singapore	(S$)	2.1566	-0.0016	552 - 577	2.1585	2.1550	-	-	-	-	-	-	-
South Africa	(R)	5.9162	-0.0438	110 - 214	6.0615	5.9096	-	-	-	-	-	-	-
South Korea	(Won)	1190.50	-0.88	015 - 095	1191.55	1189.19	-	-	-	-	-	-	-
Taiwan	(T$)	42.0101	-0.0124	989 - 212	42.0484	41.9592	-	-	-	-	-	-	-
Thailand	(Bt)	38.4993	-0.0144	752 - 234	38.5240	38.4680	-	-	-	-	-	-	-

† Rates for Mar 4. Bid/offer spreads in the Pound Spot table show only the last three decimal places. Forward rates are not directly quoted to the market but are implied by current interest rates. Sterling index calculated by the Bank of England. Base average 1990 = 100. Index rebased 1/2/95. Bid, Offer and Mid-rates in both this and the Dollar Spot tables derived from THE WM/REUTERS CLOSING SPOT RATES. Some values are rounded by the F.T.

DOLLAR SPOT FORWARD AGAINST THE DOLLAR

Mar 5		Closing mid-point	Change on day	Bid/offer spread	Day's mid high	Day's mid low	One month Rate	One month %PA	Three months Rate	Three months %PA	One year Rate	One year %PA	J.P Morgan index
Europe													
Austria	(Sch)	10.3998	+0.0215	970 - 025	10.4210	10.3900	10.3838	1.8	10.3523	1.8	10.2298	1.6	106.8
Belgium	(BFr)	30.3960	+0.066	890 - 030	30.4550	30.2870	30.351	1.8	30.259	1.8	29.928	1.5	107.8
Denmark	(DKr)	5.7131	+0.0121	116 - 145	5.7206	5.7048	5.7097	0.7	5.7041	0.6	5.7206	-0.1	108.3
Finland	(FM)	4.5895	+0.018	863 - 928	4.6010	4.5691	4.5851	1.2	4.5768	1.1	4.5601	0.6	83.5
France	(FFr)	5.0660	+0.0073	652 - 667	5.0760	5.0598	5.0619	1.0	5.0563	0.8	5.042	0.5	108.8
Germany	(DM)	1.4789	+0.0031	785 - 792	1.4825	1.4770	1.4768	1.7	1.4723	1.8	1.4556	1.6	109.5
Greece	(Dr)	241.305	-0.41	250 - 360	243.260	241.030	242.86	-7.8	245.13	-6.0	260.805	-8.1	65.5
Ireland	(I£)	1.5703	-0.0032	695 - 711	1.5720	1.5675	1.5706	-0.2	1.5708	-0.1	1.5648	0.4	-
Italy	(L)	1552.62	+2.91	199 - 325	1554.94	1548.10	1558.97	-4.9	1570.72	-4.7	1621.62	-4.4	74.1
Luxembourg	(LFr)	30.3960	+0.066	890 - 030	30.4550	30.2870	30.344	2.1	30.256	1.8	29.951	1.5	107.8
Netherlands	(Fl)	1.6557	+0.0041	552 - 561	1.6598	1.6539	1.6526	2.2	1.6462	2.3	1.624	1.9	107.7
Norway	(NKr)	6.4376	+0.0115	338 - 413	6.4810	6.4071	6.4353	0.4	6.4271	0.7	6.4101	0.4	98.1
Portugal	(Es)	153.460	+0.16	390 - 530	153.770	153.340	153.835	-2.9	154.605	-3.0	158.21	-3.1	95.0
Spain	(Pta)	125.225	+0.16	200 - 250	125.420	124.930	125.62	-3.8	126.356	-3.6	129.845	-3.7	81.0
Sweden	(SKr)	6.8465	+0.0189	434 - 495	6.8606	6.7800	6.8638	-3.0	6.893	-2.7	7.0305	-2.7	85.9
Switzerland	(SFr)	1.2021	+0.0006	017 - 024	1.2050	1.2013	1.1985	3.6	1.1916	3.5	1.1678	2.9	113.0
UK	(£)	1.5278	-0.0004	274 - 281	1.5292	1.5259	1.5266	0.9	1.525	0.7	1.5162	0.8	85.1
Ecu	-	1.2581	+0.0012	558 - 583	1.2582	1.2551	1.2584	-0.3	1.2588	-0.2	1.2574	-0.1	-
SDR†	-	0.68267	-	-	-	-	-	-	-	-	-	-	-
Americas													
Argentina	(Peso)	0.9999	+0.0001	998 - 000	1.0000	0.9998	-	-	-	-	-	-	-
Brazil	(R$)	0.9833	+0.0001	831 - 834	0.9838	0.9830	-	-	-	-	-	-	-
Canada	(C$)	1.3708	-0.0006	705 - 710	1.3720	1.3684	1.371	-0.1	1.3711	-0.1	1.3761	-0.4	82.9
Mexico	(New Peso)	7.5825	+0.0125	800 - 850	7.5870	7.5800	7.5847	-0.4	7.5879	-0.3	7.5928	-0.1	-
USA	($)	-	-	-	-	-	-	-	-	-	-	-	96.5
Pacific/Middle East/Africa													
Australia	(A$)	1.3163	+0.0002	160 - 166	1.3190	1.3160	1.3183	-1.8	1.3218	-1.7	1.3405	-1.8	89.8
Hong Kong	(HK$)	7.7318	+0.0008	313 - 323	7.7323	7.7310	7.7325	-0.1	7.7343	-0.1	7.7613	-0.4	-
India	(Rs)	33.8150	-0.49	000 - 300	34.2400	33.8000	33.965	-5.3	34.27	-5.4	35.74	-5.7	-
Israel	(Shk)	3.1054	+0.0017	030 - 078	3.1080	3.1030	-	-	-	-	-	-	-
Japan	(Y)	105.125	-0.015	100 - 150	105.490	104.850	104.69	5.0	103.89	4.7	100.82	4.1	138.6
Malaysia	(M$)	2.5436	-0.0025	430 - 440	2.5485	2.5427	2.5444	-0.4	2.5505	-1.1	2.574	-1.2	-
New Zealand	(NZ$)	1.4808	-0.0044	804 - 815	1.4845	1.4798	1.4839	-2.5	1.4897	-2.4	1.5143	-2.3	-
Philippines	(Peso)	26.1850	+0.015	750 - 950	26.1950	26.1750	-	-	-	-	-	-	-
Saudi Arabia	(SR)	3.7503	-0.0002	501 - 505	3.7505	3.7500	3.7508	-0.1	3.7515	-0.1	3.7548	-0.1	-
Singapore	(S$)	1.4115	-0.0008	110 - 120	1.4142	1.4110	1.408	3.0	1.402	2.7	1.3765	2.5	-
South Africa	(R)	3.8725	-0.0275	700 - 750	3.9680	3.8700	3.9013	-8.9	3.9527	-8.3	4.178	-7.8	-
South Korea	(Won)	779.250	-0.35	200 - 300	779.800	778.900	782.25	-4.6	785.75	-3.3	804.25	-3.2	-
Taiwan	(T$)	27.4980	-	970 - 990	27.5000	27.4970	27.518	-0.9	27.558	-0.9	-	-	-
Thailand	(Bt)	25.2000	-0.002	900 - 100	25.2180	25.1900	25.2987	-4.7	25.5025	-4.8	26.385	-4.7	-

† SDR rate per $ for Mar 4. Bid/offer spreads in the Dollar Spot table show only the last three decimal places. Forward rates are not directly quoted to the market but are implied by current interest rates. UK, Ireland & ECU are quoted in US currency. J.P. Morgan nominal indices Mar 4: Base average 1990=100

WORLD INTEREST RATES

MONEY RATES

March 5	Over night	One month	Three mths	Six mths	One year	Lomb. Inter.	Dis. rate	Repo rate
Belgium	3⅜	3⅜	3⅜	3[illegible]	3[illegible]	7.00	3.00	-
week ago	3[illegible]	3[illegible]	3[illegible]	3[illegible]	3[illegible]	7.00	3.00	-
France	4[illegible]	4[illegible]	4[illegible]	4¼	4⅝	3.90	-	5.60
week ago	4[illegible]	4[illegible]	4[illegible]	4[illegible]	4[illegible]	3.90	-	5.60
Germany	3[illegible]	3[illegible]	3¼	3½	3[illegible]	5.00	3.00	3.30
week ago	3⅜	3[illegible]	3[illegible]	[illegible]	3[illegible]	5.00	3.00	3.30
Ireland	5[illegible]	5½	5[illegible]	5½	5[illegible]	-	-	6.25
week ago	5[illegible]	5½	5½	5¼	5[illegible]	-	-	6.25
Italy	9¾	9⅝	9½	9⅝	9¼	-	9.00	9.89
week ago	10[illegible]	9⅝	9⅞	9¾	9[illegible]	-	9.00	9.72
Netherlands	3[illegible]	3½	3¼	3¼	3¼	-	3.00	3.30
week ago	3[illegible]	3¼	3[illegible]	3½	3¼	-	3.00	3.30
Switzerland	1[illegible]	1[illegible]	1[illegible]	1[illegible]	1[illegible]	5.00	1.50	-
week ago	1¼	1[illegible]	1½	1[illegible]	1[illegible]	5.00	1.50	-
US	5¾	5¼	5[illegible]	5½	5½	-	5.00	-
week ago	5[illegible]	5¼	5[illegible]	5[illegible]	5[illegible]	-	5.00	-
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	0.50	-
week ago	[illegible]	[illegible]	[illegible]	1	[illegible]	-	0.50	-
■ $ LIBOR FT London								
Interbank Fixing	-	5[illegible]	5[illegible]	5[illegible]	5[illegible]	-	-	-
week ago	-	5[illegible]	5[illegible]	5[illegible]	5[illegible]	-	-	-
US Dollar CDs	-	4.83	4.88	4.89	4.94	-	-	-
week ago	-	4.83	4.92	4.93	4.97	-	-	-
ECU Linked Ds	-	4[illegible]	4[illegible]	4[illegible]	4[illegible]	-	-	-
week ago	-	4[illegible]	4[illegible]	4[illegible]	4[illegible]	-	-	-
SDR Linked Ds	-	3[illegible]	3[illegible]	3¼	3[illegible]	-	-	-
week ago	-	3[illegible]	3[illegible]	3¼	3[illegible]	-	-	-

$ LIBOR interbank fixing rates are offered rates for $10m quoted to the market by four reference banks at 11am each working day. The banks are: Bankers Trust, Bank of Tokyo, Barclays and National Westminster.
Mid rates are shown for the domestic Money Rates, US$ CDs, ECU & SDR Linked Deposits (Ds).

EURO CURRENCY INTEREST RATES

Mar 5	Short term	7 days notice	One month	Three months	Six months	One year
Belgian Franc	3[illegible] - 3[illegible]	3[illegible] - 3[illegible]	3[illegible] - 3[illegible]	3[illegible] - 3[illegible]	3[illegible] - 3[illegible]	3[illegible] - 3[illegible]
Danish Krone	4[illegible] - 3[illegible]	4[illegible] - 4[illegible]	4[illegible] - 4[illegible]	4[illegible] - 4[illegible]	4[illegible] - 4[illegible]	4[illegible] - 4[illegible]
D-Mark	3[illegible] - 3[illegible]	3[illegible] - 3¼	3[illegible] - 3[illegible]	3[illegible] - 3¼	3[illegible] - 3[illegible]	3[illegible] - 3¼
Dutch Guilder	3¼ - 3[illegible]	3¼ - 3[illegible]	3[illegible] - 3[illegible]	3[illegible] - 3[illegible]	3[illegible] - 3[illegible]	3[illegible] - 3[illegible]
French Franc	4[illegible] - 4[illegible]	4[illegible] - 4	4[illegible] - 4[illegible]	4¼ - 4[illegible]	4[illegible] - 4¼	4½ - 4[illegible]
Portuguese Esc.	8 - 7[illegible]	8 - 7[illegible]	8 - 7[illegible]	7[illegible] - 7[illegible]	7[illegible] - 7[illegible]	7[illegible] - 7[illegible]
Spanish Peseta	8[illegible] - 8[illegible]	8[illegible] - 8[illegible]	8[illegible] - 8½	8[illegible] - 8[illegible]	8[illegible] - 8[illegible]	8½ - 8[illegible]
Sterling	6[illegible] - 6[illegible]	6[illegible] - 6[illegible]	6[illegible] - 6[illegible]	6[illegible] - 6	6[illegible] - 5[illegible]	6[illegible] - 6
Swiss Franc	2 - 1[illegible]	1[illegible] - 1[illegible]	1¼ - 1[illegible]	1¼ - 1[illegible]	1[illegible] - 1[illegible]	1[illegible] - 1[illegible]
Can. Dollar	5[illegible] - 4[illegible]	5[illegible] - 5	5[illegible] - 5[illegible]	5[illegible] - 5[illegible]	5[illegible] - 5[illegible]	5[illegible] - 5[illegible]
US Dollar	5¼ - 5	5[illegible] - 5[illegible]	5[illegible] - 5[illegible]	5¼ - 5[illegible]	5¼ - 5[illegible]	5¼ - 5[illegible]
Italian Lira	10¼ - 9¼	9¾ - 9[illegible]	9[illegible] - 9[illegible]	9½ - 9[illegible]	9[illegible] - 9[illegible]	9[illegible] - 9[illegible]
Yen	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] - ½	[illegible]
Asian $Sing	1[illegible] - 1[illegible]	1[illegible] - 1[illegible]	2 - 1[illegible]	2[illegible] - 2[illegible]	2[illegible] - 2[illegible]	2¼ - 2[illegible]

Short term rates are call for the US Dollar and Yen, others: two days' notice.

■ THREE MONTH PIBOR FUTURES (MATIF) Paris Interbank offered rate (FFr5m)

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Mar	95.68	95.65	+0.04	95.68	95.62	19,406	46,037
Jun	95.68	95.68	+0.07	95.71	95.63	15,999	59,488
Sep	95.69	95.66	+0.04	95.71	95.63	5,324	48,529

■ THREE MONTH EUROMARK FUTURES (LIFFE)* DM1m points of 100%

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Mar	96.70	96.69	-0.01	96.71	96.66	20110	140425
Jun	96.84	96.81	-0.01	96.85	96.77	44513	204750
Sep	96.76	96.71	-0.03	96.77	96.68	52736	197035
Dec	96.52	96.48	-0.02	96.55	96.45	53141	164121

■ THREE MONTH EUROLIRA FUTURES (LIFFE)* L1000m points of 100%

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Mar	90.50	90.42	-	90.50	90.40	3892	32231
Jun	91.10	90.98	-0.06	91.17	90.97	13721	33847
Sep	91.48	91.29	-0.10	91.49	91.25	3279	19305
Dec	91.48	91.36	-0.08	91.54	91.36	1354	19781

■ THREE MONTH EURO SWISS FRANC FUTURES (LIFFE) SFr1m points of 100%

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Mar	98.30	98.25	-0.03	98.30	98.19	4759	19176
Jun	98.25	98.19	-0.06	98.26	98.16	6764	20570
Sep	98.10	98.05	-0.08	98.15	98.00	3063	11733
Dec	97.88	97.77	-0.06	97.88	97.77	976	8249

■ THREE MONTH ECU FUTURES (LIFFE) Ecu1m points of 100%

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Mar	95.44	95.41	+0.01	95.44	95.36	423	6756
Jun	95.59	95.52	-0.02	95.59	95.52	886	5407
Sep	95.51	95.46	-0.01	95.51	95.46	327	3225
Dec	95.32	95.26	-	95.33	95.26	168	3229

* LIFFE futures also traded on APT

■ EUROLIRA OPTIONS (LIFFE) L1000m points of 100%

Strike Price	CALLS Mar	CALLS Jun	CALLS Sep	PUTS Mar	PUTS Jun	PUTS Sep
9025	0.22	0.86	1.26	0.05	0.15	0.22
9050	0.06	0.65	1.06	0.16	0.20	0.27
9075	0.02	0.50	0.87	0.35	0.27	0.33

Est. vol. total, Calls 2586 Puts 1902. Previous day's open int., Calls 36747 Puts 21003

CROSS RATES AND DERIVATIVES

EXCHANGE CROSS RATES

Mar 5		BFr	DKr	FFr	DM	I£	L	Fl	NKr	Es	Pta	SKr	SFr	£	C$	$	Y	Ecu
Belgium	(BFr)	100	16.79	16.67	4.864	2.095	5106	5.448	21.18	504.7	411.9	22.52	3.958	2.153	4.509	3.290	345.8	2.618
Denmark	(DKr)	53.21	10	8.868	2.588	1.115	2718	2.899	11.27	268.6	219.2	11.98	2.106	1.146	2.399	1.751	184.0	1.393
France	(FFr)	60.00	11.28	10	2.919	1.257	3065	3.269	12.71	302.8	247.2	13.51	2.375	1.292	2.705	1.974	207.5	1.571
Germany	(DM)	20.56	3.864	3.426	1	0.431	1050	1.120	4.354	103.8	84.68	4.630	0.813	0.443	0.927	0.676	71.09	0.538
Ireland	(I£)	47.73	8.970	7.955	2.322	1	2438	2.600	10.11	240.9	196.5	10.75	1.888	1.028	2.152	1.570	165.1	1.250
Italy	(L)	1.958	0.368	0.326	0.095	0.041	100.	0.107	0.415	9.882	8.065	0.441	0.077	0.042	0.088	0.064	6.771	0.051
Netherlands	(Fl)	18.36	3.450	3.059	0.893	0.385	937.5	1	3.887	92.65	75.61	4.134	0.726	0.395	0.828	0.604	63.48	0.481
Norway	(NKr)	47.22	8.874	7.870	2.297	0.989	2412	2.572	10	238.3	194.5	10.64	1.868	1.017	2.129	1.554	163.3	1.236
Portugal	(Es)	19.81	3.724	3.302	0.964	0.415	1012	1.079	4.196	100.	81.61	4.462	0.784	0.427	0.893	0.652	68.52	0.519
Spain	(Pta)	24.28	4.562	4.046	1.181	0.509	1240	1.323	5.141	122.5	100.	5.468	0.960	0.523	1.095	0.799	83.95	0.636
Sweden	(SKr)	44.40	8.344	7.400	2.160	0.930	2268	2.419	9.402	224.1	182.9	10	1.756	0.956	2.002	1.461	153.5	1.163
Switzerland	(SFr)	25.28	4.751	4.213	1.230	0.530	1291	1.377	5.354	127.6	104.1	5.694	1	0.544	1.140	0.832	87.43	0.662
UK	(£)	46.44	8.728	7.740	2.259	0.973	2372	2.530	9.835	234.4	191.3	10.46	1.837	1	2.094	1.528	160.6	1.216
Canada	(C$)	22.18	4.168	3.696	1.079	0.465	1133	1.208	4.697	111.9	91.36	4.995	0.877	0.478	1	0.730	76.70	0.581
US	($)	30.39	5.712	5.065	1.478	0.637	1552	1.656	6.437	153.4	125.2	6.846	1.202	0.654	1.370	1	105.1	0.796
Japan	(Y)	28.92	5.435	4.819	1.407	0.606	1477	1.575	6.124	146.0	119.1	6.513	1.144	0.623	1.304	0.951	100.	0.757
Ecu		38.19	7.178	6.365	1.858	0.800	1951	2.081	8.088	192.8	157.3	8.602	1.511	0.822	1.722	1.257	132.1	1

Danish Kroner, French Franc, Norwegian Kroner, and Swedish Kronor per 10: Belgian Franc, Yen, Escudo, Lira and Peseta per 100.

■ D-MARK FUTURES (IMM) DM 125,000 per DM

	Open	Latest	Change	High	Low	Est. vol	Open int.
Mar	0.6770	0.6757	-0.0016	0.6772	0.6752	17,340	65,191
Jun	0.6800	0.6788	-0.0017	0.6803	0.6799	3,568	8,395
Sep	0.6830	0.6820	-0.0008	0.6830	0.6830	57	1,700

■ JAPANESE YEN FUTURES (IMM) Yen 12.5 per Yen 100

	Open	Latest	Change	High	Low	Est. vol	Open int.
Mar	0.9524	0.9531	+0.0027	0.9547	0.9496	14,926	54,996
Jun	0.9622	0.9640	+0.0027	0.9653	0.9611	6,507	13,029
Sep	-	0.9718	-	-	-	42	929

■ SWISS FRANC FUTURES (IMM) SFr 125,000 per SFr

	Open	Latest	Change	High	Low	Est. vol	Open int.
Mar	0.8321	0.8311	-	0.8333	0.8308	10,890	34,197
Jun	0.8400	0.8381	-0.0002	0.8403	0.8363	3,222	5,916
Sep	0.8455	0.8465	+0.0012	0.8470	0.8455	6	295

■ STERLING FUTURES (IMM) £62,500 per £

	Open	Latest	Change	High	Low	Est. vol	Open int.
Mar	1.5256	1.5272	+0.0008	1.5278	1.5252	8,557	39,949
Jun	1.5232	1.5240	+0.0002	1.5250	1.5232	2,634	12,599
Sep	-	1.5220	-	1.5220	1.5210	6	15

UK INTEREST RATES

LONDON MONEY RATES

Mar 5	Over-night	7 days notice	One month	Three months	Six months	One year
Interbank Sterling	7 - 5⅝	6[illegible] - 6[illegible]	6[illegible] - 6[illegible]	6⅛ - 6	6[illegible] - 5[illegible]	6⅛ - 6
Sterling CDs	-	-	6[illegible] - 6⅛	6[illegible] - 6	6 - 5[illegible]	6[illegible] - 5[illegible]
Treasury Bills	-	-	6⅛ - 6[illegible]	5[illegible] - 5[illegible]	-	-
Bank Bills	-	-	6⅛ - 6[illegible]	5[illegible] - 5[illegible]	5[illegible] - 5[illegible]	-
Local authority deps.	6[illegible] - 6[illegible]	6[illegible] - 6[illegible]	6¼ - 6[illegible]	6⅛ - 6[illegible]	6[illegible] - 5[illegible]	6[illegible] - 5[illegible]
Discount Market deps	7 - 6¼	6½ - 6⅜	-	-	-	-

UK clearing bank base lending rate 6¼ per cent from January 18, 1996

	Up to 1 month	1-3 month	3-6 months	6-9 months	9-12 months
Certs of Tax dep. (£100,000)	2½	5½	5	5	4¼

Certs of Tax dep. under £100,000 is 2½pc. Deposits withdrawn for cash 1¼pc.
Certs of Tax dep. under £100,000 is 2½pc. Deposits withdrawn for cash 1¼pc. Make up day Feb 29. Ave. tender rate of discount 5.9260pc. ECGD fixed rate Stlg. Export Finance. Make up day Feb 29. Agreed rate for period Mar 26, 1996 to Apr 23, 1996, Schemes II & III 7.48pc. Reference rate for period Feb 1, 1996 to Feb 29, 1996, Schemes IV & V 6.238pc. Finance House Base Rate 6.5pc from March 1, 1996

■ THREE MONTH STERLING FUTURES (LIFFE) £500,000 points of 100%

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Mar	93.96	93.94	-0.01	93.96	93.92	10057	63037
Jun	94.17	94.14	-0.02	94.18	94.10	27241	69452
Sep	94.15	94.11	-0.01	94.16	94.07	19850	52272
Dec	93.95	93.90	-0.01	93.96	93.85	9659	44603
Mar	93.63	93.58	-0.02	93.65	93.53	2014	31915

Also traded on APT. All Open interest figs. are for previous day.

■ SHORT STERLING OPTIONS (LIFFE) £500,000 points of 100%

Strike Price	CALLS Mar	CALLS Jun	CALLS Sep	PUTS Mar	PUTS Jun	PUTS Sep
9375	0.20	0.44	0.53	0.01	0.05	0.17
9400	0.03	0.25	0.35	0.09	0.11	0.25
9425	0	0.11	0.23	0.31	0.22	0.37

Est. vol. total, Calls 8123 Puts 2643. Previous day's open int., Calls 181480 Puts 183350

EMS EUROPEAN CURRENCY UNIT RATES

Mar 5	Ecu cen. rates	Rate against Ecu	Change on day	% +/- from cen. rate	% spread v weakest	Div. ind.
Netherlands	2.15214	2.12066	+0.00331	-1.46	4.40	11
Spain	162.493	160.544	+0.086	-1.20	4.12	8
Belgium	39.3960	38.9328	+0.0544	-1.18	4.09	9
Austria	13.4383	13.3202	+0.02	-0.88	3.78	6
Germany	1.91007	1.89409	+0.00288	-0.84	3.74	8
Denmark	7.28580	7.31742	+0.01174	0.43	2.43	-3
Portugal	195.792	196.680	+0.188	0.45	2.41	-3
France	6.40608	6.48987	-0.00228	1.31	1.54	-11
Ireland	0.792214	0.814957	-0.000444	2.87	0.00	-19
NON ERM MEMBERS						
Greece	292.867	308.968	-1.111	5.50	-2.49	-
Italy	2106.15	1984.12	-15.93	-5.79	9.20	-
UK	0.786652	0.838170	-0.00127	6.55	-3.45	-

Ecu central rates set by the European Commission. Currencies are in descending relative strength. Percentage changes are for Ecu; a positive change denotes a weak currency. Divergence shows the ratio between two spreads: the percentage difference between the actual market and Ecu central rates for a currency, and the maximum permitted percentage deviation of the currency's market rate from its Ecu central rate.
(17/9/92) Sterling and Italian Lira suspended from ERM. Adjustment calculated by the Financial Times.

■ PHILADELPHIA SE £/$ OPTIONS £31,250 (cents per pound)

Strike Price	CALLS Mar	CALLS Apr	CALLS May	PUTS Mar	PUTS Apr	PUTS May
1.500	2.60	2.80	3.35	0.08	0.35	0.88
1.510	1.74	2.21	2.89	0.16	0.62	1.21
1.520	0.98	1.57	2.16	0.32	0.98	1.63
1.530	0.88	1.06	1.86	0.52	1.47	2.14
1.540	0.44	0.68	1.25	0.78	2.09	2.68
1.550	0.13	0.40	0.92	1.40	2.76	3.34

Previous day's vol., Calls N/A Puts N/A. Prev. day's open int., Calls N/A Puts N/A

■ THREE MONTH EURODOLLAR (IMM) $1m points of 100%

	Open	Latest	Change	High	Low	Est. vol	Open int.
Mar	94.75	94.74	-	94.75	94.73	35,899	316,323
Jun	94.98	94.92	-0.02	94.99	94.91	76,746	400,604
Sep	95.01	94.92	-0.02	95.02	94.92	79,372	339,208

■ US TREASURY BILL FUTURES (IMM) $1m per 100%

	Open	Latest	Change	High	Low	Est. vol	Open int.
Mar	95.20	95.20	-0.03	95.20	95.20	1,455	4,647
Jun	95.36	95.36	-	95.36	95.35	1,026	6,590
Sep	95.36	95.36	-0.02	95.36	95.33	92	1,806

All Open interest figs. are for previous day

■ EUROMARK OPTIONS (LIFFE) DM1m points of 100%

Strike Price	CALLS Mar	CALLS Apr	CALLS May	CALLS Jun	PUTS Mar	PUTS Apr	PUTS May	PUTS Jun
9650	0.15	0.33	0.34	0.36	0.01	0.02	0.05	0.06
9675	0.02	0.12	0.15	0.17	0.09	0.06	0.09	0.11
9700	0	0.04	0.05	0.06	0.30	0.20	0.23	0.25

Est. vol. total, Calls 11109 Puts 24089. Previous day's open int., Calls 304926 Puts 341035

■ EURO SWISS FRANC OPTIONS (LIFFE) SFr 1m points of 100%

Strike Price	CALLS Mar	CALLS Jun	CALLS Sep	PUTS Mar	PUTS Jun	PUTS Sep
9825	0.07	0.15	0.16	0.07	0.21	0.38
9850	0.01	0.06	0.08	0.26	0.37	0.55
9875	0	0.01	0.04	0.50	0.57	0.78

Est. vol. total, Calls 50 Puts 50. Previous day's open int., Calls 6345 Puts 4572

BASE LENDING RATES

	%		%		%
Adam & Company	6.25	Duncan Lawrie	6.25	Royal Bk of Scotland	6.25
Allied Trust Bank	6.25	Exeter Bank Limited	7.25	•Singer & Friedlander	6.25
AIB Bank	6.25	Financial & Gen Bank	7.00	•Smith & Williamson Secs	6.25
•Henry Ansbacher	6.25	•Robert Fleming & Co	6.25	TSB	6.25
Bank of Baroda	6.25	Girobank	6.25	United Bank of Kuwait	6.25
Banco Bilbao Vizcaya	6.25	•Guinness Mahon	6.25	Unity Trust Bank Plc	6.25
Bank of Cyprus	6.25	Habib Bank AG Zurich	6.25	Western Trust	6.25
Bank of Ireland	6.25	•Hambros Bank	6.25	Whiteaway Laidlaw	6.25
Bank of India	6.25	Heritable & Gen Inv Bk	6.25	Yorkshire Bank	6.25
Bank of Scotland	6.25	•Hill Samuel	6.25		
Barclays Bank	6.25	C. Hoare & Co	6.25	• Members of London Investment Banking Association	
Brit Bk of Mid East	6.25	Hongkong & Shanghai	6.25	* In administration	
•Brown Shipley & Co Ltd	6.25	Julian Hodge Bank	6.25		
Citibank NA	6.25	•Leopold Joseph & Sons	6.25		
Clydesdale Bank	6.25	Lloyds Bank	6.25		
The Co-operative Bank	6.25	Meghraj Bank Ltd	6.25		
Coutts & Co	6.25	Midland Bank	6.25		
Credit Lyonnais	6.25	•Mount Credit Corp	6.25		
Cyprus Popular Bank	6.25	NatWestminster	6.25		
		•Rea Brothers	6.25		

LONDON SHARE SERVICE

ALCOHOLIC BEVERAGES

	Notes	Price	+ or –	52 week high	52 week low	Mkt Cap£m	Yld Gr's	P/E
Allied Domecq	♣♥□	512	–2	568	476½	5,304	5.8	18.5
Bulmer (HP)	♣♥	561	+2	561	398	296.2	2.7	17.6
Burn St Dist	♣♥□	128	–	146	95	77.2	5.2	25.8
Grand Met	♣♥□	437xd	–3	487	389½	9,150	4.3	18.8
Guinness	♣♣♥□	498	+7	536	412	9,491	3.8	14.5
Highland	♣♥	358	–	406	315	478.9	2.8	16.2
Kirin Y	□	763½	–8	868	621	7,929	0.8	28.8
Macallan-Glen	♣♣♥	182	–	217	157	180.2	1.0	35.9
Macdon Martin A	♣♥	635	–	660	600	87.0	2.1	17.9
Matthew Clark	♣♣♥□	667xd	+4	698	542	614.8	3.9	–
Merrydown	♣♥	103	–	140	68	11.2	2.4	–
Seagram $		£23½	[illegible]	£25⅞	£16¼	6,380	1.2	–

BANKS, MERCHANT

	Notes	Price	+ or –	52 week high	52 week low	Mkt Cap£m	Yld Gr's	P/E
Carings 9pc Cm 2nd Pf		50½	–	50½	50½	6.31	19.8	–
Cater Allen	♣♥	487	–	525	424	152.2	8.0	7.7
Close Bros	♣♥□	379	–	392	334	482.8	3.0	16.7
Gerrard & Nat	♣♥	417	–1	472	395	283.5	6.7	13.5
Hambros	♥□	214	+1	225	180	378.6	4.4	–
7½pc Cv Pf		101½xd	–	107½	94	130.7	9.2	–
Joseph (L)	♣♥	450	–	463	353	23.9	5.2	15.5
King & Shaxson	♣♥□	155	–	165	85	40.9	7.3	12.0
Rea Brothers	♣♥	80	–	87	44	23.3	2.1	24.0
Schroders	♣♥□	1270	–	1478	953½	1,917	1.4	18.1
N/V	♥	995	–	1180	850½	406.1	1.8	14.2
Singer & Fried	♣♥□	108½	–½	113	81	218.2	4.2	11.3
8½pc Cv Ln 09/14		£133	–	£137	£1[illegible]	40.6	6.4	–
[illegible]								

BANKS, RETAIL

[illegible]

BREWERIES, PUBS & REST

[illegible]

BUILDING & CONSTRUCTION

[illegible]

BUILDING MATS. & MERCHANTS

[illegible]

CHEMICALS

[illegible]

DISTRIBUTORS

[illegible]

DIVERSIFIED INDUSTRIALS

[illegible]

ELECTRICITY

[illegible]

ELECTRONIC & ELECTRICAL EQPT

[illegible]

ELECTRONIC & ELECTRICAL EQPT - Cont.

[illegible]

ENGINEERING

[illegible]

ENGINEERING - Cont.

[illegible]

ENGINEERING, VEHICLES

[illegible]

EXTRACTIVE INDUSTRIES

[illegible]

EXTRACTIVE INDUSTRIES - Cont.

[illegible]

FOOD PRODUCERS

[illegible]

GAS DISTRIBUTION

[illegible]

HEALTH CARE

[illegible]

HEALTH CARE - Cont.

[illegible]

HOUSEHOLD GOODS

[illegible]

INSURANCE

[illegible]

INVESTMENT TRUSTS

Approved by the Inland Revenue

[illegible]

INVESTMENT TRUSTS - Cont.

[illegible]

INV TRUSTS SPLIT CAPITAL

Approved by the Inland Revenue

[illegible]

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LONDON SHARE SERVICE

INV TRUSTS SPLIT CAPITAL - Cont.

[illegible]

OTHER INVESTMENT TRUSTS

[illegible]

INVESTMENT COMPANIES

[illegible]

LEISURE & HOTELS

[illegible]

LEISURE & HOTELS - Cont.

[illegible]

LIFE ASSURANCE

[illegible]

MEDIA

[illegible]

OIL EXPLORATION & PRODUCTION

[illegible]

OIL, INTEGRATED

[illegible]

OTHER FINANCIAL

[illegible]

OTHER FINANCIAL - Cont.

[illegible]

PAPER, PACKAGING & PRINTING

[illegible]

PHARMACEUTICALS

[illegible]

PROPERTY

[illegible]

PROPERTY - Cont.

[illegible]

RETAILERS, FOOD

[illegible]

RETAILERS, GENERAL

[illegible]

RETAILERS, GENERAL - Cont.

[illegible]

SUPPORT SERVICES

[illegible]

SUPPORT SERVICES - Cont.

[illegible]

TELECOMMUNICATIONS

[illegible]

TEXTILES & APPAREL

[illegible]

TOBACCO

[illegible]

TRANSPORT

[illegible]

WATER

[illegible]

AIM

[illegible]

AIM - Cont.

[illegible]

AMERICANS

[illegible]

CANADIANS

[illegible]

SOUTH AFRICANS

	Notes	Price	+ or -	52 week high	52 week low	Mkt Cap£m	Yld Gr's	P/E
Anglo Am Ind		[illegible]	—	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Barlow	♥	[illegible]	—	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Gold Flds Prop R		[illegible]	—	170	[illegible]	[illegible]	[illegible]	7.0
NK Props		[illegible]	—	[illegible]	[illegible]	[illegible]	[illegible]	-
SASOL	♥	[illegible]	+17	[illegible]	475	[illegible]	2.2	-
SA Brews		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.4	39.1
Standard Bank	□	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	20.8
Tiger Oats		1180	—	1270	850	1,730	1.8	[illegible]
Tongaat-Hulett	†	1030	—	1247	872	[illegible]	1.8	20.5

GUIDE TO LONDON SHARE SERVICE

Prices for the London Share Service delivered by FT Extel, a member of the Financial Times Group.

Company classifications are based on those used for the FT-SE Actuaries Share Indices.

Closing mid-prices are shown in pence unless otherwise stated. Highs and lows are based on intra-day mid-prices over a rolling 52 week period.

Where stocks are denominated in currencies other than sterling, this is indicated after the name.

Symbols referring to dividend status appear in the notes column daily as a guide to yields and P/E ratios. Dividends and Dividend covers are published on Monday.

Market capitalisation shown is calculated separately for each line of stock quoted.

Earnings used in calculations are based on IIMR 'Headline Earnings' formula.

Price/earnings ratios are based on latest annual reports and accounts and, where possible, are updated on interim figures.

Yields are based on mid-prices, are gross, adjusted for a dividend tax credit of 20 per cent and allow for value of declared distribution and rights.

Estimated Net Asset Values (NAVs) are shown for Investment Trusts, in pence per share, along with the percentage discounts (Dis) or premiums (Pm -) to the current closing share price. The NAV basis assumes prior charges at par value, convertibles converted and warrants exercised if dilution occurs.

- □ Indicates the most actively traded stocks. This includes UK stocks where transactions and prices are published continuously through the Stock Exchange Automated Quotation system (SEAQ) and non-UK stocks through the SEAQ International system.
- • Highs and lows marked thus have been adjusted to allow for capital changes
- † Interim since increased or resumed
- ‡ Interim since reduced, passed or deferred
- ● Figures or report awaited
- ♥ Rule 2.1(a)(v) Overseas incorporated companies listed on an approved exchange.
- ♣ Free annual/interim report available, see details below.
- ✻ USM; not listed on Stock Exchange and company not subjected to same degree of regulation as listed securities.
- ‡‡ Rule 4.2(a) Irish incorporated non-listed companies.
- # Price at time of suspension
- ¶ Indicated dividend yield after pending scrip and/or rights issue.
- ◆ Merger bid or reorganisation in progress.
- § Forecast dividend yield; p/e based on earnings updated by latest interim statement.
- ♠ Unregulated collective investment scheme.

a Yield based on annualised dividend
b Figures based on prospectus or other official estimates.
g Assumed dividend yield after rights issue.
h Assumed dividend yield after scrip issue.
n Rights issue pending
q Earnings based on preliminary figures.
s Dividend yield excludes a special payment.
t Indicated dividend yield, p/e ratio based on latest annual earnings.
u Forecast, or estimated annualised dividend yield, p/e based on previous year's earnings
v P/e ratios are calculated under new ACT guidelines.
z Dividend yield includes a special payment
F Yield based on prospectus or other official estimates for 1994-95.
G Assumed yield after pending scrip and/or rights issue.
H Yield based on prospectus or other official estimates for 1995.
K Yield based on prospectus or other official estimates for 1996
L Estimated annualised yield, p/e based on latest annual earnings.
M Yield based on prospectus or other official estimates for 1995-96.
R Forecast annualised yield, p/e based on prospectus or other official estimates.
W Pro forma figures.
Z Dividend yield to date.

Abbreviations: xd ex dividend; xc ex scrip issue; xr ex rights; xa ex all; xc ex capital distribution.

This service is available to companies whose shares are regularly traded in the United Kingdom for a fee of £1350 a year for each security shown, subject to the Editor's discretion.

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For readers phoning from outside UK, please dial +44 in place of the first 0.

The share prices printed on these pages are also available on the internet at www.FT.com.

FT MANAGED FUNDS SERVICE

● FT Cityline Unit Trust Prices are available over the telephone. Call the FT Cityline Help Desk on (+44 171) 873 4378 for more details.

OFFSHORE AND OVERSEAS

BERMUDA (SIB RECOGNISED)

BERMUDA (REGULATED)(**)

GUERNSEY (SIB RECOGNISED)

GUERNSEY (REGULATED)(**)

IRELAND (SIB RECOGNISED)

IRELAND (REGULATED)(**)

ISLE OF MAN (SIB RECOGNISED)

ISLE OF MAN (REGULATED)(**)

JERSEY (SIB RECOGNISED)

JERSEY (REGULATED)(**)

LUXEMBOURG (SIB RECOGNISED)

LUXEMBOURG (REGULATED)(**)

OFFSHORE INSURANCES

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Credit Investment Funds - Contd.

Money Universal, Sicav

CMI Insurance Co Ltd

Professional Investment Consultants

CA Securities Investment Fund Mangt Ltd

Global Asset Management - Contd.

MD Sass Re/Enterprise International Ltd

Republic Funds

OTHER OFFSHORE FUNDS

OFFSHORE INSURANCES

MANAGED FUNDS NOTES

LONDON STOCK EXCHANGE

MARKET REPORT

Sell programmes and US news upsets equities

By Steve Thompson,
UK Stock Market Editor

The effect of some strong US economic news, plus a series of programme trades, said to have been weighted on the sell side, combined to choke off what had been an exceptionally strong opening performance by UK equities.

The bad news came after the UK market's main indices had moved up to new all-time records on the back of strong hopes that domestic interest rates will be lowered after Mr Kenneth Clarke, the chancellor of the exchequer, meets Mr Eddie George, the governor of the Bank of England, on Thursday.

But with Wall Street struggling manfully after an unhappy start, the FT-SE 100 index ended a busy trading session a net 8.5 higher at 3,777.1, well short of its previous closing high, 3,781.3, reached on February 2. The index did, however, record a new all-time intra-day high of 3,792.5.

The FT-SE Actuaries All-Share index reached another new record closing 5.76 up at 1,864.59. And the FT-SE Mid 250 index gave another power-packed performance, racing up to finish 27.3 higher at a record close of 4,272.2.

The driving forces behind the Mid's showing came from yet another stunning performance from British Biotech, and from numerous bid targets. Of these NYNEX, the cable television group, jumped almost 6 per cent.

A 0.5 per cent rise in US factory goods orders, which compared with a consensus forecast of a 0.5 per cent fall, did the damage in US bonds, which fell around three-quarters of a point in early New York trading.

With bonds pressured, US equities struggled and the Dow Jones Industrial Average was down 20 points shortly after the start, before stabilising and moving into positive ground after London closed.

Earlier, UK stocks had made rapid progress, basking in the reflected glory of Wall Street's overnight 63-point upsurge.

A flurry of institutional buying, promoted by the interest rate optimism and takeover hopes, bulldozed Footsie to its new record, with the second liners tagging along before taking off in their own right.

But with the bond markets starting to flag, the sell programmes began to bite into the market's confidence. From its record, Footsie retreated to a session low of 3,771.9, only 3.3 up, before steadying with Wall Street.

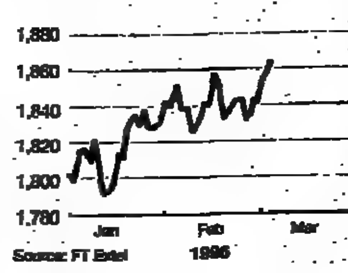
Manchester United's victory over table-topping Newcastle United threw the Premier League championship wide open again and saw the former's shares climb 13 to an all-time high of 280p; bookmakers installed United as the new favourites to take the league title.

BAA and British Airways took the honours in the FT-SE 100 performance table, with both stocks up over 3 per cent, the former after a spate of broker buy recommendations and the latter after excellent February traffic numbers.

On the downside, the big oil stocks shuddered amid talk that Iraq may sell up to $2bn-worth of oil on world markets.

Boosted by the programme trade activity, turnover in equities expanded to 863m shares. Retail business on Monday was valued at £1.47bn.

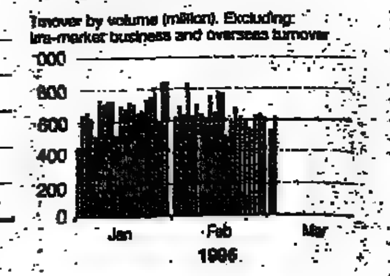
FT-SE-A All-Share index



Source: FT Extel

Equity shares traded

Turnover by volume (million). Excluding: intra-market business and overseas turnover



Indices and ratios

FT-SE 100	3777.1	+8.5
FT-SE Mid 250	4272.2	+27.3
FT-SE-A 350	1889.0	+5.9
FT-SE-A All-Share	1864.59	+5.76
FT-SE-A All-Share yield	3.74	(3.75)

FT Ordinary index	2807.9	+16.6
FT-SE-A Non Fins p/e	17.52	(17.47)
FT-SE 100 Fut Mar	3777.0	-1.5
10 yr Gilt yield	7.81	(7.76)
Long gilt/equity yld ratio:	2.20	(2.19)

Best performing sectors

1 Transport .... +2.1
2 Electronic & Elec .... +1.2
3 Building Mats .... +1.0
4 Chemicals .... +0.9
5 Water .... +0.8

Worst performing sectors

1 Oil, Integrated .... -0.8
2 Mineral Extraction .... -0.5
3 Tobacco .... -0.5
4 Household Goods .... -0.4
5 Oil Exploration .... -0.5

BA beats traffic forecasts

Transport leaders scooped the Footsie pool with airports group BAA and British Airways turning in the day's two strongest performances.

BA's bumper traffic returns for February took analysts totally by surprise and there were suggestions yesterday that a number of fingers were beginning to tighten around upgrade triggers.

The airline's traffic flows jumped 13.4 per cent, running counter to concerns about severe weather and the impact of the end to the IRA ceasefire. The consensus expectation among City transport teams was probably 7 per cent growth.

The extra day, as a result of Leap year, was said to have accounted for some three percentage points of the upturn but even so the numbers were impressive, and included very strong premium traffic business.

BA shares jumped 17 to 534p to run BAA, which shot forward 18 to 516p in turnover of 8.6m, a close second in the Footsie rankings.

BAA has been a dull performer lately, lagging the market by 1 per cent since the start of the year. A number of buy notes are known to be in circulation, and the company has recently been meeting with institutions.

P&O stayed in demand in spite of stories linking the group's name with the Cunard line, said to be up for sale following the agreed bid from Kvaerner of Norway for Cunard's parent company, Trafalgar House. The shares put on 5 to 540p.

Construction group Amec, in which Kvaerner has a 26 per cent stake, fell 4 to 95p on revived worries that the Kvaerner holding was about to be placed in London.

Allders promoted

Following the bid by Uni-Chem for Lloyds Chemists, retail specialists are scrabbling around to identify the next bid in the sector.

Mr Mark Josefson, of Panmure Gordon, has identified Allders as a possible candidate, after examining three criteria that might well come under the scrutiny of a predator.

He has discovered that Allders is the only company in the sector that meets all of his criteria. It has one of the five highest p/e discounts to the market, one of the five most significant Enterprise Value ratios (a measure based on cashflow) and one of the five highest asset values compared to its share price.

Finally, he believes the company splits very cleanly between the department store arm and the international duty free arm – which could attract the attention of airlines such as Cathay Pacific and SAS. The shares were a penny easier at 181p.

Kingfisher, the group that owns Woolworths in the UK, jumped 14 to 534p after Panmure Gordon featured the company as its key buy in the sector.

Tarmac dips

News that Ministry of Defence police had raided its Wolverhampton offices pushed aggregates group Tarmac sharply lower in heavy volume. Down 5½ at one stage, the shares closed off 3 at 119p.

The shares have outpaced the market by 26 per cent over the past three months and turnover yesterday surged to 15m.

There was no immediate explanatory statement from the company, which did not best please the City. "There is nothing marketmakers like less than uncertainty", said one leading analyst.

A top broker buy note helped push up Gleeson (M.J.) for the second day running. The shares jumped 58 to 803p.

British Biotech rose sharply in very thin volume after the company announced encouraging third quarter results and the expansion of trials on its cancer treatment.

Biotech shares responded positively to the company's announcement that it is expanding trials on its marimastat drug and will announce further results in May. The market also reacted positively to news that the company's lexipafant drug began a Phase III trial in the US in patients with acute pancreatitis. The shares jumped 272 to 2320p.

Oil stocks came under pressure as unease grew over the possible acceptance by Iraq of United Nations conditions for limited oil sales.

Potential extra supply would be negative for a market already likely to be oversupplied in 1996 and there were additional worries about Monday's news that OPEC is producing 1.5m barrels above its self-imposed ceiling.

Thirdly, Algeria and Venezuela want to increase production in respect of OPEC quotas.

BP slipped 3½ to 543p and Shell Transport 9½ to 843½p. On Monday, Lehman Brothers lowered its recommendation on four international oil companies, citing a 75 per cent chance that Iraq will accept the UN's limited oil sale deal. It reduced its recommendation on Shell to neutral from outperform.

East Midlands Electricity improved 5 to 615p with the help of a buy recommendation from Hoare Govett. The broker argued that, since the regional electricity companies demerged their holding in National Grid, East Midlands was the only one to have underperformed the market.

The broker was also recommending Yorkshire Water on the basis that yesterday's announcement of a convertible buy-back makes a subsequent share buy-back increasingly likely.

Mr Matthew Siebert, of Hoare, believes the company could comfortably repurchase 20m shares, or about 10 per cent of the equity. The shares closed 7 higher at 650p.

The latest intensification of the US computer price wars washed over on to electronics group Amstrad and circuit solder specialist Cookson.

Amstrad ended as backmarker in the FT-SE Mid 250 index, tumbling more than 3 per cent to close off 6 at 209p. Cookson, which puts out annual results tomorrow, came off 5 to 312p.

Among conglomerates, Harrisons and Crosfield continued to gain ground on hopes for a demerger, adding 8 to 172p for a two-day advance of 10.

Pub groups continued to move ahead following recent strong results from Wetherspoon. Regent Inns jumped 35 to 920p and Wetherspoon added a further 10 to 753p for a two-day advance of 31. Allied Domecq came off 2 to 512p, as stories about a line of stock on offer built up around the shares.

Rumours of corporate activity continued to buoy cable TV shares. Nynex CableComms added 6 to 111p, while TeleWest Communications gained 4 to 140p, with 9.5m shares changing hands.

Mobile phones group Vodafone rose 5½ to 246p in 16m traded helped by a positive note from ABN Amro Hoare Govett which saw 50p of upside in the shares.

ICI powered forward again, closing 17 ahead at a record peak of 939p as a shortage of stock, combined with news of a $390m expansion into Latin America, squeezed the price higher.

A 30 per cent increase in profits prompted Metal Bulletin shares to jump 80 to 773p.

FINANCIAL TIMES EQUITY INDICES

	Mar 5	Mar 4	Mar 1	Feb 29	Feb 28	Yr ago	*High	*Low
Ordinary Share	2807.9	2791.3	2775.5	2756.4	2756.2	2277.6	2807.9	2238.3
Ord. div. yield	3.82	3.84	3.86	3.88	3.88	4.62	4.79	3.76
P/E ratio net	17.08	16.98	16.88	16.76	16.80	16.32	21.33	15.36
P/E ratio nil	16.85	16.75	16.65	16.56	16.58	15.86	22.21	15.17

*For 1995/96. Ordinary Share index since compilation: high 2807.9 5/03/96; low 49.4 26/6/40. Base Date: 1/7/35.

Ordinary Share hourly changes

Open	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	High	Low
2812.0	2807.9	2812.5	2809.4	2806.2	2808.5	2803.0	2803.6	2807.2	2816.1	2802.7

	Mar 5	Mar 4	Mar 1	Feb 29	Feb 28	Yr ago
SEAQ bargains	37,290	36,845	33,406	31,438	32,378	29,486
Equity turnover (£m)†	-	1471.5	1665.6	1699.6	1824.2	2029.0
Equity bargains†	-	44,782	32,437	36,320	37,567	40,198
Shares traded (ml)†	-	601.4	549.3	614.6	640.0	711.7

†Excluding intra-market business and overseas turnover.

■ London market data

Rises and falls*		52 Week highs and lows		LIFFE Equity options	
Total Rises	773	Total Highs	165	Total contracts	35,726
Total Falls	484	Total Lows	20	Calls	20,109
Same	1,056			Puts	15,617

Mar. 5 *Data based on Equity shares listed on the London Share Service.

FUTURES AND OPTIONS

■ FT-SE 100 INDEX FUTURES (LIFFE) £25 per full index point (APT)

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Mar	3788.0	3777.0	-5	3797.0	3769.0	13057	42465
Jun	3791.0	3779.5	-5	3798.5	3775.5	3550	22732
Sep	-	3795.5	-5	-	-	0	2355

■ FT-SE MID 250 INDEX FUTURES (FFE) £10 per full index point

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Mar	4291.0	4265.0	+3.0	4291.0	4291.0	29	2918
Jun	-	4301.0	+3.0	-	-	0	1431

■ FT-SE 100 INDEX OPTION (LIFFE) (3776) £10 per full index point

[illegible]																

Calls 5,004 Puts 5,771

■ EURO STYLE FT-SE 100 INDEX OPTION (LIFFE) £10 per full index point

[illegible]																

Calls 1,366 Puts 2,676 * Underlying index value. Premiums shown are based on settlement prices. † Long dated expiry months.

LONDON RECENT ISSUES: EQUITIES

Issue price p	Amt paid up	Mkt. cap (£m.)	1995/96 High	Low	Stock	Close price p	+/-	Net div.	Div. cov.	Grs yld	P/E net
-	F.P.	52.5	525	408	BZW Eq (Brnds)	525	+13	-	-	-	-
-	F.P.	6.28	6½	5½	†Ballynamy	6	+½	-	-	-	-
7.5	F.P.	14.7	8½	5¼	Clubhaus	8		-	-	-	1.1
-	F.P.	0.07	5½	3¼	Clubhaus Wts	3¼		-	-	-	-
-	F.P.	11.8	90	65	†Dmatek	63		-	-	-	-
-	F.P.	13.3	16	11	Ex-Lands Props	12		Lx0.5	-	5.2	-
-	F.P.	0.16	13½	8½	Ex-Land Wts	8½		-	-	-	-
12	F.P.	56.8	16½	15	†Freepages	15½	+½	-	-	-	-
-	F.P.	30.6	143	108	IOC Intl	125		-	-	-	-
-	F.P.	0.13	8	8	†Nthm Pstm Wts	8		-	-	-	-
-	F.P.	15.6	71	65	†Optical Care (S)	66	-2	-	-	-	-
-	F.P.	1.13	105	100	†Revelation Polly	105		-	-	-	-
54	F.P.	2.92	60	50	†Self Sealing Sys	50		-	-	-	-
175	F.P.	125.4	223	168	Shire Pharms	206	+2	-	-	-	-
-	F.P.	1.00	9	6	†SkyePharma Wts	8¼	+¼	-	-	-	-
180	F.P.	111.6	188	178	Streamline	180	-3	Wv7.7	1.7	3.2	1.6

† Alternative Investment Market. For a full explanation of all other symbols please refer to The London Share Service notes.

FT GOLD MINES INDEX

	Mar 4	% chg on day	Mar 1	Year ago	Gross div yield %	P/E ratio	52 week High	Low
Gold Mines Index (33)	2258.57	-3.9	[illegible]	[illegible]	1.46	-	2820.73	16861
■ Regional Indices								
Africa (16)	3095.37	-1.9	3136.30	2534.36	2.75	38.28	3853.68	22724
Australasia (5)	2828.72	-1.1	2851.09	1942.24	2.20	43.10	2827.34	19285
North America (12)	1955.85	-3.8	[illegible]	1404.21	0.89	89.03	2186.39	14046

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FT - SE Actuaries Share Indices — The UK Series

	Mar 5	Day's chge%	Mar 4	Mar 1	Feb 29	Year ago	Div. yield%	Net cover	P/E ratio	Xd adj. ytd	Total Return
FT-SE 100	3777.1	+0.2	3768.6	3752.7	3727.6	2977.0	3.89	2.06	15.59	25.03	1520.1
FT-SE Mid 250	4272.2	+0.6	4244.9	4236.4	4215.0	3327.9	3.45	1.74	20.80	35.56	1697.4
FT-SE Mid 250 ex Inv Trusts	4293.2	+0.7	4264.4	4258.2	4234.1	3335.5	3.57	1.79	19.50	37.89	1707.3
FT-SE-A 350	1889.0	+0.3	1883.1	1876.0	1864.1	1485.5	3.80	2.00	16.46	13.22	1565.3
FT-SE-A 350 Higher Yield	1882.5	+0.1	1880.3	1875.2	1864.4	1507.8	4.70	1.84	14.44	13.21	1266.3
FT-SE-A 350 Lower Yield	1901.0	+0.5	1891.0	1881.9	1868.8	1482.7	2.85	2.27	19.97	13.26	1307.2
FT-SE SmallCap	2069.46	+0.3	2063.97	2058.71	2052.77	1691.06	3.05	1.81	22.62	8.89	1676.3
FT-SE SmallCap ex Inv Trusts	2050.17	+0.3	2044.77	2039.13	2033.02	1672.04	3.28	1.90	20.21	8.52	1671.1
FT-SE-A ALL-SHARE	1864.59	+0.3	1858.83	1852.03	1840.77	1470.41	3.74	1.99	16.83	12.53	1559.5

■ FT-SE Actuaries All-Share

	Mar 5	Day's chge%	Mar 4	Mar 1	Feb 29	Year ago	Div. yield%	Net cover	P/E ratio	Xd adj. ytd	Total Return
10 MINERAL EXTRACTION(24)	3270.97	-0.5	3288.90	3284.17	3257.26	2573.05	3.96	1.51	20.93	22.56	1386.2
12 Extractive Industries(6)	4204.61	+0.7	4174.22	4171.31	4162.10	3351.20	3.77	2.39	13.84	85.48	1230.9
15 Oil, Integrated(3)	3306.01	-0.8	3333.25	3327.05	3295.72	2575.07	4.18	1.35	22.11	18.24	1433.0
16 Oil Exploration & Prod(15)	2241.48	-0.3	2249.11	2247.99	2234.47	1801.20	2.19	1.41	40.56	0.00	1330.3
20 GEN INDUSTRIALS(278)	2083.15	+0.4	2075.29	2071.86	2059.45	1769.48	3.86	1.89	16.63	4.94	1121.5
21 Building & Construction(34)	1114.37	+0.5	1108.94	1105.57	1085.25	907.05	3.63	2.02	17.03	1.16	919.1
22 Building Matls & Merchs(29)	1933.42	+1.0	1914.83	1911.68	1901.99	1682.45	3.88	2.03	15.89	0.81	969.6
23 Chemicals(23)	2578.94	+0.9	2557.09	2533.87	2524.87	2120.85	3.88	2.03	15.86	1.34	1201.1
24 Diversified Industrials(21)	1790.22	-0.3	1795.66	1788.40	1774.60	1743.59	5.51	1.48	15.36	12.81	985.6
25 Electronic & Elect Equip(36)	2360.90	+1.2	2333.81	2364.61	2351.99	1863.48	3.05	1.84	22.25	2.86	1212.8
26 Engineering(71)	2341.19	+0.1	2339.32	2332.54	2318.86	1722.26	3.22	2.34	16.61	3.73	1403.4
27 Engineering, Vehicles(13)	2684.95	+0.1	2683.33	2645.50	2629.07	2067.00	3.86	1.26	25.62	0.23	1358.7
28 Paper, Pckg & Printing(26)	2739.44	+0.3	2731.09	2723.07	2710.29	2695.27	3.86	2.52	12.54	0.61	1123.9
29 Textiles & Apparel(15)	1489.14	+0.2	1485.44	1489.85	1506.22	1395.77	4.87	1.75	15.21	7.42	897.5
30 CONSUMER GOODS(91)	3641.41	+0.3	3630.00	3599.54	3594.56	2925.51	3.70	1.74	18.90	11.98	1325.6
32 Alcoholic Beverages(8)	2823.06	+0.3	2814.48	2800.98	2801.39	2507.59	4.31	1.67	17.39	28.48	1009.0
33 Food Producers(23)	2568.05	-0.1	2571.89	2555.89	2538.60	2330.12	4.24	1.70	17.28	4.90	1141.8
34 Household Goods(15)	2519.04	-0.4	2528.62	2528.26	2522.89	2476.11	3.78	2.15	15.35	2.27	945.8
36 Health Care(20)	1973.04	+0.2	1969.47	1954.87	1945.75	1600.21	2.85	1.80	25.98	2.54	1186.5
37 Pharmaceuticals(13)	5179.14	+0.8	5137.80	5074.97	5076.42	3574.39	3.20	1.69	23.14	12.95	1734.2
38 Tobacco(1)	4841.11	-0.5	4866.52	4836.87	4841.11	3448.71	4.85	1.94	13.02	0.00	1171.1
40 SERVICES(253)	2367.15	+0.7	2351.54	2337.26	2321.57	1814.45	2.94	2.10	20.23	14.00	1220.6
41 Distributors(32)	2652.48	+0.4	2642.35	2634.22	2620.41	2272.73	3.89	1.82	18.56	4.27	966.6
42 Leisure & Hotels(29)	2940.32	+0.3	2931.84	2942.46	2937.58	2043.80	2.83	2.09	21.12	106.45	1564.8
43 Media(46)	3893.38	+0.7	3867.01	3852.01	3828.78	2890.56	2.17	2.13	27.04	15.44	1399.6
44 Retailers, Food(15)	1899.34	-0.1	1901.23	1870.32	1854.90	1757.62	3.85	2.41	13.51	2.85	1191.7
45 Retailers, General(43)	1965.71	+0.8	1949.91	1928.86	1906.89	1495.84	3.02	2.23	18.56	3.73	1111.3
47 Breweries, Pubs & Rest.(24)	3007.93	+0.4	2996.33	3003.57	2995.45	2092.29	3.28	2.08	18.29	15.72	1434.8
48 Support Services(49)	2132.74	+0.3	2125.33	2121.34	2108.71	1420.33	2.27	2.54	21.74	3.32	1344.8
49 Transport(21)	2393.70	+2.1	2344.28	2320.81	2308.56	2103.41	3.62	1.39	24.81	3.84	984.6
60 UTILITIES(33)	2494.43	+0.4	2484.97	2479.06	2451.37	2216.08	4.97	2.07	12.16	35.13	1056.1
62 Electricity(12)	2778.41	-0.1	2780.36	2795.49	2771.44	2141.31	5.00	2.60	9.63	137.11	1360.7
64 Gas Distribution(2)	1591.45	.....	1591.45	1601.05	1581.85	1893.04	7.53	1.37	12.10	0.00	798.4
66 Telecommunications(7)	2066.22	+0.6	2055.92	2039.01	2017.32	1909.86	4.08	1.76	17.44	0.15	936.3
68 Water(12)	2127.81	+0.8	2110.18	2088.73	2084.10	1747.56	5.73	2.60	8.39	3.61	1153.8
69 NON-FINANCIALS(667)	1972.24	+0.3	1965.50	1958.63	1944.59	1591.14	3.77	1.89	17.52	11.38	1471.9
70 FINANCIALS(108)	2960.14	+0.2	2955.51	2955.51	2939.56	2081.83	3.94	2.50	12.71	34.49	1264.5
71 Banks, Retail(8)	4197.28	+0.3	4185.19	4186.33	4157.57	2704.46	3.69	2.83	11.97	65.81	1366.1
72 Banks, Merchant(6)	3529.95	.....	3529.97	3541.31	3532.98	2858.54	2.65	2.40	19.86	0.00	1106.1
73 Insurance(24)	1431.34	.....	1431.75	1432.37	1419.76	1168.76	5.40	2.94	7.89	21.10	1064.9
74 Life Assurance(6)	3586.59	-0.2	3594.67	3583.56	3547.42	2413.20	3.88	1.53	20.99	0.00	1461.8
77 Other Financial(23)	2542.00	+0.1	2539.02	2543.04	2533.52	1823.81	3.58	1.91	18.26	13.40	1432.3
79 Property(41)	1452.60	.....	1452.02	1450.59	1451.27	1385.74	4.30	1.31	22.25	3.48	893.0
80 INVESTMENT TRUSTS(126)	3154.28	+0.3	3143.80	3134.95	3126.23	2547.63	2.14	1.04	56.23	10.77	1095.5
89 FT-SE-A ALL-SHARE(901)	1864.59	+0.3	1858.83	1852.03	1840.77	1470.41	3.74	1.99	16.83	12.53	1559.5
FT-SE-A Fledgling	1157.48	-0.2	1159.32	1157.05	1153.90	955.54	2.94	2.20	19.29	4.12	1200.1
FT-SE-A Fledgling ex Inv Trusts	1158.23	-0.3	1161.30	1158.85	1154.90	954.81	3.22	2.37	16.36	4.33	1200.0

■ Hourly movements

	Open	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.10	High/day	Low/day
FT-SE 100	3788.4	3780.8	3788.4	3784.1	3779.2	3779.6	3772.5	3773.2	3778.4	3792.5	3771.9
FT-SE Mid 250	4261.1	4264.7	4268.8	4270.8	4274.2	4271.6	4270.2	4270.9	4272.0	4274.8	4261.1
FT-SE-A 350	1891.6	1889.7	1893.1	1891.6	1890.0	1889.9	1887.0	1887.3	1888.7	1895.0	1886.6

Time of FT-SE 100 Day's high: 10:21 AM Day's low: 1:55 PM. FT-SE 100 1996 High: 3781.3 (02/02/96) Low: 2954.2 (23/01/95).

■ FT-SE Actuaries 350 Industry baskets

	Open	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.10	Close	Previous	Change
Bldg & Cnstrcn	1129.0	1128.1	1127.0	1128.6	1129.6	1129.3	1130.3	1130.8	1132.1	1132.1	1127.9	4.2
Pharmaceuticals	5118.8	5114.8	5119.4	5109.2	5104.7	5110.3	5100.7	5111.5	5122.0	5122.5	5081.5	41.0
Water	2117.0	2118.4	2117.3	2117.9	2115.4	2113.4	2112.1	2113.2	2118.8	2120.8	2103.1	17.7
Banks, Retail	4238.6	4238.8	4265.4	4264.6	4255.9	4253.3	4251.1	4248.6	4252.7	4250.8	4238.6	12.2

Additional information on the FT-SE Actuaries Share Indices is published in Saturday issues.

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TRADING VOLUME

■ Major Stocks Yesterday

	Vol. 000s	Closing price	Day's change
[illegible]			

Based on trading volume for a selection of major securities dealt through the SEAQ system yesterday until 4.30pm. † Indicates an FT-SE 100 index constituent. All trades are rounded. Source: FT Extel.

WORLD STOCK MARKETS

EUROPE

PACIFIC

AFRICA

NORTH AMERICA

INDICES

India BSE Sens.(1979)	(c)	3402.05	3417.81	3932.09 2/1/95	2828.08 25/1/95	
Indonesia Jakarta Comp.(10/8/82)	591.48	592.04	589.11	597.35 27/2/96	414.21 19/4/95	
Ireland ISEQ Overall(4/1/88)	2356.52	2348.69	2348.05	2358.52 5/3/96	1813.59 23/1/95	
Italy Banca Comm Ital(1972)	620.92	611.88	611.00	680.54 10/2/95	547.79 5/12/95	
MIB General(2/1/95)	1053.0	1037.0	1036.0	1082.09 9/2/96	982.09 15/1/96	
Japan Nikkei 225(16/5/49)	20183.87	20053.88	20168.63	21118.30 8/2/96	14485.40 3/7/95	
Nikkei 300(1/10/82)	289.84	290.22	292.02	307.98 5/1/96	222.25 13/6/95	

Thailand Bangkok SET(30/4/75)	1311.66	1325.86	(c)	1472.04 10/7/95	1135.69 16/3/95	
Turkey Istanbul Comp.(Jan 1986)	64826.9	66308.7	62136.3	66308.70 4/3/96	24844.30 23/1/95	
WORLD MS Capital Int(1/1/70)	755.1*	755.6	752.7	761.18 23/2/96	598.21 23/1/95	
CROSS-BORDER Eurotrack 100(26/10/90)	1588.41	1587.02	1590.91	1590.91 1/3/96	1222.41 13/3/95	
Euro Top-100(26/6/90)	1402.8	1411.51	1416.84	1416.84 1/3/96	1117.34 9/3/95	
JCapelDrgns(31/12/88)	(u)	376.45	374.34	382.52 19/2/96	282.07 23/1/95	
ING Bmgs Emrg(7/1/92)	156.37	155.78	153.97	162.72 5/2/96	117.15 10/3/95	

INDEX FUTURES

	Open	Sett Price	Change	High	Low	Est. vol.	Open int.
■ CAC-40 (200 x Index)							
Mar	2036.0	2010.0	-13.5	2038.0	2006.0	17,840	47,628
Apr	2040.0	2013.5	-14.0	2040.0	2012.0	1,006	2,390
■ DAX							
Mar	2502.0	2477.0	-13.0	2510.5	2473.5	22,908	
Jun	2516.5	2489.5	-13.5	2523.0	2486.5	2,292	

	Open	Sett Price	Change	High	Low	Est. vol.	Open int.
■ OMX							
Mar	1510.00	1486.00	-16.25	1519.00	1485.50	6,232	21,020
Apr	1513.50	1480.25	-15.75	1516.50	1486.75	180	944
■ SOFFEX							
Mar	3418.0	3390.0	-20.0	3419.0	3379.1	4,808	18,434
Apr	3412.0	3376.0	-23.0	3412.0	3376.0	251	2,434

** Sat Mar 2 : Taiwan Weighted Price 4854.90; Korea Comp Ex 856.51. Base values of all indices are 100 except: Australia All Ordinary and Mining - 500; Austria Traded, BEL20, HEX Gen., MIB Gen., SBF250, CAC40, Euro Top-100, ISEQ Overall; Toronto Comp./Metals & Minerals and DAX - all 1,000; JSE Gold - 255.7; JSE 20 Industrials - 264.3; NYSE All Common - 50 and Standard and Poor's - 10. §§ Montreal: ♦ Toronto. (c) Closed. (u) Unavailable. ‡ IBIS/DAX after-hours index: Mar 5 - 2472.62 -14.31.

US INDICES

Transport	2108.34	2066.53	2081.56	2111.37 (22/2/96)	1473.19 (3/1/95)	2111.37 (22/2/96)	12.32 (8/7/32)
Utilities	224.28	221.48	219.48	234.06 (12/2/96)	183.03 (3/1/95)	256.45 (31/8/93)	10.50 (8/4/32)

DJ Ind. Day's high 5646.39 (5573.41) Low 5511.99 (5424.20) (Theoretical♦)
Day's high 5629.05 (5536.92) Low 5537.85 (5436.49) (Actual♦)

Standard and Poors							
Composite‡	650.81	644.37	640.43	661.45 (12/2/96)	459.11 (3/1/95)	661.45 (12/2/96)	4.40 (1/6/32)
Industrials♥	764.45	756.65	753.34	776.23 (22/2/96)	546.28 (3/1/95)	776.23 (22/2/96)	3.62 (21/6/32)
Financial	68.01	67.26	65.15	68.01 (4/3/96)	41.64 (3/1/95)	68.01 (4/3/96)	8.64 (1/10/74)
NYSE Comp.	348.87	345.18	342.80	351.70 (12/2/96)	250.73 (3/1/95)	351.70 (12/2/96)	4.46 (25/4/42)
Amex Mkt Val	567.04	563.44	562.00	570.16 (22/2/96)	433.12 (6/1/95)	570.16 (22/2/96)	29.31 (9/12/72)
NASDAQ Cmp	1094.88	1088.06†	1100.05	1117.79 (23/2/96)	743.58 (3/1/95)	1117.79 (23/2/96)	54.87 (31/10/72)

■ RATIOS

	Mar 1	Feb 23	Feb 16	Year ago
Dow Jones Ind. Div. Yield	2.15	2.12	2.16	2.73
	Feb 28	Feb 21	Feb 14	Year ago
S & P Ind. Div. yield	1.89	1.88	1.87	2.36
S & P Ind. P/E ratio	20.83	19.90	20.07	19.60

■ NEW YORK ACTIVE STOCKS

Monday	Stocks traded	Close price	Change on day
Compaq	10,158,200	40	-1⅝
Bay Network	9,082,000	33⅜	-1⅛
Limited	8,336,900	18¾	+⅛
Wal-Mart	7,263,800	22⅞	+¼
Home Depot	5,155,800	47¾	+3¼
K-Mart	4,822,300	7⅛	—
IBM	4,284,300	116⅛	-2
Fed Dep Str	4,238,500	33⅛	+1⅞
Horizon	[illegible]	17⅝	...
Unisys	3,891,800	5½	-⅛

■ TRADING ACTIVITY

● Volume (million)	Mar 4	Mar 1	Feb 29
New York SE	419.88	474.61	448.213
Amex	22.686	26.487	22.883
NASDAQ	485.115	599.334	545.836
NYSE			
Issues Traded	3,093	3,087	3,086
Rises	1,626	1,423	888
Falls	784	896	1,472
Unchanged	703	748	726
New Highs	176	110	75
New Lows	17	22	32

	Open	Latest	Change	High	Low	Est. vol.	Open int.
■ S&P 500							
Mar	649.20	651.70	+4.45	651.70	648.80	82,949	159,551
Jun	655.05	657.85	+4.55	657.85	654.90	13,219	56,707

	Open	Sett price	Change	High	Low	Est. vol.	Open int.
■ Nikkei 225							
Mar	20190.0	20260.0	+90.0	20330.0	20180.0	14,135	108,579
Jun	20280.0	20290.0	+100.0	20400.0	20240.0	35,180	175,499

Open interest figures for previous day.

† Correction. * Calculated at 15.00 GMT. ● Excluding bonds. ‡ Industrial, plus Utilities, Financial and Transportation. ♦ The DJ Ind. Index theoretical day's highs and lows are the averages of the highest and lowest prices reached during the day by each stock, whereas the actual day's highs and lows (supplied by Telekurs) represent the highest and lowest values that the index has reached during the day. (The figures in brackets are previous day's). ♥ Subject to official recalculation.

Prices supplied by Telekurs

NOTES - Prices on this page are as quoted on the individual exchanges and are mostly last traded prices. Highs/Lows are based on data from Jan 1 1995. § Dealings suspended. xd Ex dividend. xc Ex scrip issue. xr Ex rights. xa Ex all. † Priced in US $.

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■ TOKYO - MOST ACTIVE STOCKS: Tuesday, March 5, 1996

	Stocks Traded	Closing Prices	Change on day
Ind Bk of Japan	12.1m	2650	-10
Komatsu	8.9m	901	+1
Shinko Electric	6.9m	835	+25
Hitachi Zosen	6.9m	530	+1
Toshiba Corp	6.6m	801	-3
NKK Corp	5.0m	287	-3
Nichirei Corp	4.7m	695	+10
Toyo Umpanki	4.6m	570	+11
Oki Electric Ind	4.4m	920	-5
Sumitomo Mtl Ind	4.2m	297	+2

4 pm close March 5

NEW YORK STOCK EXCHANGE COMPOSITE PRICES

1995/96 High	Low	Stock	Div	Yld. %	P/E	Sls 100s	High	Low	Close Quote	Ch'ge Prev. Close
22⅛	12⅛	AAR	0.48	2.3	25	537	21⅛	20⅝	20¾	+⅛
46¼	25	AMP	1.00	2.3	22	2353	44	42⅞	43⅝	+½
89¾	53⅜	AMR			35	3953	88½	87⅛	89	-1¼
50½	36⅜	ASA	2.00	4.4	29	918	45⅛	44⅞	45	+½
44¾	30¾	AbbtL	0.96	2.2	20	13750	43½	42⅝	43¼	-½
16⅞	12	Abitibi Pr x	0.40	2.9	7	501	14⅛	13⅞	14	-⅛
30⅝	21	ABM Ind	0.70	2.3	16	123	30¼	30⅛	30¼	-⅛
17½	13⅛	Acptnceln			10	239	14¾	14¾	14¾	+⅛
50⅝	27⅞	ACE Ltd	0.56	1.2	11	7784	48¼	47¼	47¾	-½
9⅞	8⅛	ACM Gvt In	0.90	9.2	8	155	9¾	9⅝	9¾	+⅛
7⅞	6½	ACM GvOpp	0.66	8.5		154	7¾	7⅝	7¾	+⅛
7½	5¾	ACM Gvt Sp	0.75	10.5		674	7⅛	7	7⅛	+⅛
9⅛	7¼	ACM Gvt Se	0.90	10.0		1024	9	8⅞	9	
9½	7⅝	ACM Man	0.90	9.6		543	9⅜	9⅛	9⅜	+¼
29¼	10¼	AcmeClv	0.52	2.6	4	648	19¾	19⅜	19⅝	+¼
30¾	6⅝	Acme Elecs			56	100	6¾	6⅝	6⅝	-⅛
34½	23¼	Acordia	0.72	2.6	15	189	28	28	28	
16¾	10⅛	Acuson			48	536	15⅝	15¼	15½	+⅛
19⅝	15⅝	Adams Expr	0.36	1.8	0	100	19⅜	19¼	19¼	-⅛
38⅞	16⅛	AdvMic			6	3432	18⅞	18½	18⅞	+⅛
10¼	5	Advest Grp	0.16	1.6	9	90	9¾	9¼	9¾	+⅜
27½	16½	Advo Inc	0.10	0.5	23	1946	22	21⅞	22	+⅛
46¾	24 80	Aegon	1.29	2.9	16	30	44¼	43⅞	44⅛	-½
5⅞	3⅜	Aerfbr			8	222	4⅜	4¼	4¼	-⅛
76⅞	46¾	Aetnal	2.76	3.6	36	2743	76⅝	75½	76⅛	+⅛
49½	31⅞	Aflac	0.52	1.1	14	1383	48⅞	48	48⅛	-½

[illegible]

- B -

[illegible]

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- D -

[illegible]

- E -

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[illegible]

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- P - Q -

[illegible]

- R -

[illegible]

- S -

[illegible]

Continued on next page

NYSE COMPOSITE PRICES

4 pm close March 5

Continued from previous page

Prices data supplied by Telekurs

Yearly highs and lows for NYSE reflect the period from Jan 1, 1995. Unless otherwise noted, rates of dividend are annual disbursements based on the latest declaration. Sales figures are unofficial.
d-new yearly low. P/E price-earnings ratio. cld-called. u-new yearly high. x-ex-dividend or ex-rights. yld-yield. z-sales in full.
¶ Dealings suspended.

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AMEX COMPOSITE PRICES

4 pm close March 5

Stock	Div.	P/E	Sls 100s	High	Low	Close	Chng
NuwaveE		100	15	4	3⅞	4	
NVR		10	45	9⅞	9¾	9⅞	
Pegasus G	0.10	161	1478	15⅜	15⅛	15⅛	+⅛
Perini	0.80	1	82	8⅛	8	8⅛	
Pittway A	0.33	28	84	44½	42	44½	+¼
PMC	1.04	10	179	12⅞	12¾	12⅞	+⅛
RegenBnd		55	2	35	35	35	
SJW Corp	2.22	10	7	37½	37¼	37½	+½
Tab Prods	0.20	23	66	6⅛	6⅝	6[illegible]	+[illegible]
Tel&Data	0.38	28	288	46⅞	46½	45⅝	+¼
Thermedics		67	1279	29⅜	27	29	+1⅞
Thermolase		39	381	28½	27⅞	28½	+⅝
TotlPNA	0.30	132	375	9¼	9	9¼	+[illegible]
TownCntry		2	200	[illegible]	[illegible]	[illegible]	[illegible]
Triton		0	77	[illegible]	[illegible]	[illegible]	[illegible]
Tubos Mex		31	388	7⅞	7¾	7⅞	+⅛
TurnrBrA	0.07	89	30	29⅛	28⅝	28⅝	-½
TurnrBrB	0.07	91	2040	29⅝	29	29⅛	-⅜

NASDAQ NATIONAL MARKET

4 pm close March 5

Stock	Div.	P/E	Sls 100s	High	Low	Last	Chng
Dep Gty	1.32	12	30	47¼	45½	46½	
Devcon	0.20	37	571	9⅛	9	9	
DH Tech		17	60	23	21¼	22¼	
Digi Intl		18	1207	27⅞	26⅞	27¼	+½
Dig Micro		11	708	9¾	d9¼	9⅜	-⅛
Dig Sound		5	387	1[illegible]	1⅜	1⅜	-[illegible]
Dig Sys		19	592	14⅞	14⅜	14½	-⅛
Dionex Cp		25	99	37½	36¾	37½	+½
Dixie Yrn	0.20	7	322	5⅛	4¾	5[illegible]	+⅛
DNA Plant	2.25	1	1360	⅞	[illegible]	[illegible]	-[illegible]
Dollar Gn	0.20	24	190	29¾	28½	29⅛	+⅛
Dorch Htl	0.88	18	81	13¼	12¾	13¼	+½
DrectEngy		12	67	18⅛	18⅛	18⅛	
DressBarn		12	862	10⅜	9¾	10	-⅛
Drey (D)	0.24	124	125	32¼	30¾	32¼	+1
Drug Empo	0.08	14	182	3¾	3½	3⅝	-⅛
DS Bancor	1.09	11	136	29	28½	29	+½
Duriron	0.52	21	664	27½	27	27¼	-[illegible]
Dynatech		34	2687	25½	24¾	25½	+½

– E –

Stock	Div.	P/E	Sls 100s	High	Low	Last	Chng
Eagle Fd		3	169	2⅛	2	2⅛	+⅛
EastEnvmt		4	54	1[illegible]	1[illegible]	1[illegible]	
ECI Tel	0.10	21	4140	25	24¼	24⅞	

AMERICA

Technology issues stage bounce back

Wall Street

US shares shrugged off a drop in bond prices and rose by midsession as technology shares bounced back from several weak sessions, *writes Lisa Bransten in New York.*

By 1 pm the Dow Jones Industrial Average was 5.42 stronger at 5,605.57, the Standard & Poor's 500 added 0.29 at 651.10, and the American Stock Exchange composite rose 0.28 at 567.32. Volume on the New York Stock Exchange came to 245m shares.

The bond market slipped in early trading after stronger-than-expected figures on December and January factory orders persuaded some investors that the Federal Reserve was unlikely to lower interest rates at this month's meeting of its Open Market Committee.

Meanwhile, the Nasdaq composite, which is about 40 per cent technology issues added 6.69 at 1,091.46 to reverse a bit of the 16 points it has lost this month.

The Nasdaq was bolstered by gains in both the computer-related technology sector and the biotech sector.

The Pacific Stock Exchange technology index, which includes both Nasdaq and NYSE-traded technology issues added 1 per cent as large issues such as IBM and Microsoft rebounded from recent weakness.

In early trading IBM was $2¼ stronger at $118⅝ and Microsoft added $1⅛ at $97⅞.

Biotech issues were lifted by a wave of approvals from the Food and Drug Administration.

The American Stock Exchange biotech index added 1.8 per cent. Chiron rose $2¼ at $112¾ after the FDA approved the marketing of an eye implant developed by the company. Other rising biotech companies included Amgen, up $2½ at $63¾ and Biogen, $3⅝ stronger at $71½.

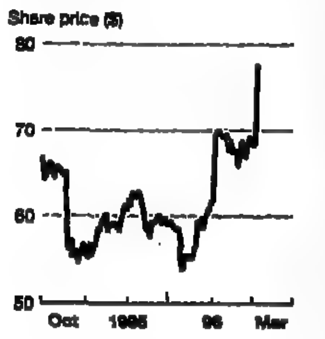
Elsewhere, W.R. Grace soared $9⅞ or 14 per cent to $78½ after it said that it would not merge with Hercules.

Mr Thomas Gossage, chairman of Hercules and a member of Grace's board, resigned his position at Grace leading to speculation that his company might launch a hostile takeover bid.

Shares in Hercules slid $⅝ at $62¼.

BankAmercia added $1⅞ or 3 per cent at $77⅞. Late on Monday the bank announced that it would buy back up to $2bn of its common stock and $1bn of preferred stock over the next two years.

WR Grace



Source: FT Extel

Canada

Toronto was weak at midsession in restrained trade ahead of today's federal budget.

The TSE-300 composite index was down 17.06 by noon at 4,962.80 in volume of 35.8m shares.

Cyclicals were heavily traded, including Echo Bay Mines which fell C$⅛ to C$m 17¾. Denison Mines, the uranium miner, slipped 1 cent to 47 cents after Monday's rapid rise.

Forzani Group, the sporting goods retailer, was sharply lower for a second straight day. The shares fell 50 cents to C$3.25 on reports that the company was facing a cash crunch after a disappointing sales season.

Buenos Aires falls back

BUENOS AIRES was slightly lower by midsession as brokers said that the market was taking a well earned pause after heavy gains in the last two sessions. The Merval index was off 3.00 at 524.78 by midday.

Inflation and trade data released late on Monday caused little interest, and most investors were watching the US for direction.

SAO PAULO was also mixed in midsession activity. By midsession was little changed by noon, up 321.91 at 51,848.

Many investors were cautious ahead of testimony by the head of the central bank, Mr Gustavo Loyola, to congress on the Banco Nacional failure. The central bank has come under heavy fire recently for allegedly failing to detect a huge loss run up by failed Banco Nacional over a 10-year period. MEXICO CITY was down 1.5 per cent by midsession, with the IPC index off 33.11 at 2,846.62.

S Africa golds tumble

Johannesburg was depressed by a 5.4 per cent tumble in the gold index as industrials, too, gave up early advances, dashing hopes that the sector could resume the strength with which it had begun the year.

Analysts noted that activity had been generally quiet, which accounted for some of the market's volatility, with local and foreign institutions remaining absent until a clearer trend emerged.

They added that gold shares would continue to slide until the bullion price managed to lift itself above the $393 to $394 range in which it had settled following its collapse late on Monday.

The all-share index lost 67.0 to 6,651.6, industrials fell 32.2 to 8,333.3 and the golds dropped 94.9 to 1,668.6.

De Beers ended 75 cents weaker at R122.50 on results.

Shares in Teljoy Holdings lost R1.15 or 21.3 per cent to R4.25 after the company announced that it would report a material loss in the year to March 31, 1996. Teljoy said on Monday that the executive chairman and founder, Mr Theo Rutstein, and the managing director, Mr Denis Kennedy, were resigning.

EUROPE

Amsterdam flattens out, Hunter Douglas climbs

After a good start, AMSTERDAM bumped into negative factors, such as a growing conviction that the US would probably not cut interest rates in the near future. The AEX index finished up a scant 0.13 at 519.18, after a high of 522.64.

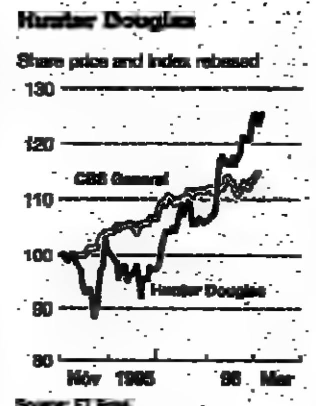
Hunter Douglas, the maker of window blinds and architectural products, rose Fl 2 or 2 per cent to Fl 96.70. The company reported a much stronger than expected 1995 profit, lifted its dividend and made an encouraging statement about prospects for 1996, particularly in the emerging economies of Latin America and Asia.

However, it was a different story at Hoogovens, the steel and aluminium group, which fell Fl 2.50 to Fl 66.10 ahead of tomorrow's results. Brokers described the fall as a technical correction following the stock's 25 per cent rise since the start of the year.

VNU, which reported 1995 results in line with forecasts just after the market closed, was 40 cents higher at Fl 28.70.

OSLO saw the rise and rise of Kvaerner B, up another NKr7 at NKr205, which helped the total index reach a lifetime, intraday peak of 783.32 before it closed 1.05 higher at 779.07. Attention shifted to Aker, another offshore blue chip, towards the end of trade; more than 4m Aker shares were traded as the A closed NKr2 higher at NKr121.

Hunter Douglas



Source: FT Extel

HELSINKI featured gains in the telecoms blue chip Nokia A, up FM3.60 at FM165 on a US network order, and in Kone, the elevator marker, which climbed FM15 to FM450 on strong demand, as the Hex index closed 10.65 higher at 1,846.87. However, the apparent fading of recently strong US interest in Raisio, the foodstuffs and chemicals group, left it FM19, or 12 per cent lower at FM142.

ZURICH turned back from a firm opening and the SMI gave up 17.2 to 3,383.4 on profit-taking after the strong run which had taken the market to an all-time high on Monday.

CS Holding, with 1995 results in line with most expectations, finished SFr2.50 weaker at SFr112.50 as a number of small portfolio management banks downgraded their recommendations. They were said to have reservations about the bank's method of accounting for extraordinary provisions of SFr675m, which were written off against the shareholder equity.

SBC lost SFr5 to SFr440 but UBS bearers edged SFr1 higher at SFr1,291 on continued speculation that a truce has been forged between the bank and its largest shareholder, the BK Vision chairman, Mr Martin Ebner. BK Vision rose SFr9 to SFr1,555. A SFr5 jump in the UBS registered shares was attributed to heavy buying by a small Zurich bank.

Industrials were weak, Brown Boveri losing SFr11 to SFr1,426 on foreign selling. Swissair dropped SFr37 to SFr1,118 on profit-taking after recent strong gains.

FRANKFURT lacked impetus again, and pushed secondary stocks around as the Dax index fell 14.31 to an Ibis-indicated 2,472.52 in turnover up from DM7.4bn to DM9bn.

The bad news about Fielmann's profits growth rate left the optician another DM1.90, or 2.7 per cent lower at DM68.90 after a 15.7 per cent drop on Monday afternoon. This, said Ms Barbara Altmann at B Metzler in Frankfurt, impacted on analysts' feelings about other companies and the sportswear company, Adidas, dropped DM4.30 to DM94.20 after a strong run.

Duetsche Babcock, the troubled engineer, continued to be sensitive to any sort of bad news and fell DM3.60, or 3.7 per cent to DM93. But the likely reference of Gehe's LLoyds Chemists bid to Britain's competition authorities left the German company DM10 higher at DM845.

PARIS felt the burden of technical selling late in the day but the CAC-40 index just manmaged to keep a tenuous grip on the 2,000 level, closing off 13.37 at 2,001.94.

Turnover was FFr4.6bn.

Valeo featured again as both Renault and Peugeot threatened to move their business to another supplier if the car parts manufacturer was taken over by a company they thought was unsympathetic. Valeo, which lost FFr9 to FFr259.80, had been subject to a series of rumours after Cerus of Italy, part of the De Benedetti group, indicated that it might sell its 28 per cent stake. Peugeot rose FFr11 to FFr791 and Renault put on 50 centimes to FFr150.

MADRID stayed upset, and the general index fell another 4.93, or 1.5 per cent to 324.10. Sector by sector, Monday's victims were singled out again, with banks off 1.4 per cent, construction 2.1 per cent, and utilities 2.4 per cent down.

However, the market also caught up with stocks which held up remarkably well on Monday, said Ms Nicola Mann at Merrill Lynch. Gas Natural and Pryca, the retailer, lost 5.1 and 3.4 per cent respectively.

MILAN was pulled back from its highs by profit-taking after volume picked up on renewed foreign demand. The Comit index rose 9.09 to 620.92 but the real-time Mibtel index turned back from a peak of 9,933 to finish 43 higher at 9,875.

Eni picked up L57 to L6,007 on Monday's preliminary 1995 results that were in line with expectations. Benetton rose L240 to L18,909after forecasting a 5 to 6 per cent rise in 1995 profit. Fiat, which a rise in the price of its cars, rose L69 to L5,062.

PRAGUE rose for the seventh consecutive session, the PSE index gaining at 1.0 to 475.6. Leading stocks all did well. Ceska Sporitelna, the savings bank, dropped a further Kcs9 to Kcs206. Dealers had expected a readjustment in the price after last week's strong gains.

BUDAPEST extended the rise made at the start of the week and the Bux index finished at another all-time high, up 65.37 at 2,347.34. Turnover almost doubled, jumping to Ft1.35bn from Monday's Ft695.7m.

The appointment of a new finance minister, Mr Peter Medgyessy, has restored investor confidence in the country, particularly from foreign institutions.

FT-SE Actuaries Share Indices

Mar 5								THE EUROPEAN SERIES
Hourly changes	Open	10.30	11.00	12.00	13.00	14.00	15.00	Close
FT-SE Eurotrack 100	1596.87	1597.11	1595.02	1590.92	1590.64	1586.60	1587.95	1588.41
FT-SE Eurotrack 200	1677.66	1678.13	1676.53	1672.87	1672.47	1666.84	1670.23	1670.45
	Mar 4	Mar 1	Feb 29	Feb 28	Feb 27			
FT-SE Eurotrack 100	1587.02	1590.91	1575.00	1574.85	1556.41			
FT-SE Eurotrack 200	1672.30	1674.80	1656.68	1658.58	1643.14			

Base value 1000 (26/10/90): High/day: 100 - [illegible]; 200 - [illegible] Low/day: 100 - 1585.48 200 - 1666.84 † Partial.

Written and edited by William Cochrane, Michael Morgan and John Pitt

ASIA PACIFIC

Nikkei average and Hong Kong make solid progress

Tokyo

The Nikkei average gained moderately on technical buying, which counterbalanced selling of high technology and banking stocks, *writes Emiko Terazono in Tokyo.*

The 225 index rose 119.99 to 20,183.87, after moving between 20,069.76 and 20,303.87. However, weakness in the banking sector depressed other indices, with the Topix index of all first section stocks down 1.96 to 1,554.08 and the Nikkei 300 retreating 0.58 to 289.04.

In London, the ISE/Nikkei 50 index fell 1.10 to 1,352.85.

A decline in the high-technology sector in overnight trading on Wall Street prompted profit taking in electricals, while continuing uncertainty over the government's budget bill, which contains the controversial public spending plan to bail out housing loan companies, hit bank stocks.

Volume was estimated at 350m shares against 266.2m. Advances led declines by 511 to 487, with 206 unchanged.

Reports that the ruling coalition and the banks had reached a compromise over the housing loan bailout plan, failed to raise confidence. In order to avert criticism by politicians, banks agreed to an additional bailout contribution of Y500bn by raising profits by Y1,000bn over the next five years through restructuring. The extra profit would then be channelled to the government in the form of corporate taxes.

Among the banks Industrial Bank of Japan, the day's most active issue, fell Y10 to Y2,650, Mitsubishi Bank lost Y30 to Y2,200 and Bank of Tokyo Y70 to Y1,590.

In technology stocks, Toshiba dropped Y3 to Y801 and Fujitsu lost Y10 to Y1,060. Semiconductor-related stocks were also lower, Advantest declining Y130 to Y5,560.

Speculative stocks gained ground on active trading. Toyo Umpanki rose Y11 to Y570 and Shinko Electric Y25 to Y835.

In Osaka, the OSE average fell 13.69 to 21,572.83 in volume of 219.5m shares. Nintendo, the video game maker, fell Y90 to Y7,020 on profit taking.

Roundup

An index futures short squeeze and further talk of covered warrant issues took HONG KONG 1.8 per cent higher. The Hang Seng index surged 200.08 to 11,454.08 as turnover improved to HK$5.8bn.

HSBC, the most highly capitalised issue, jumped HK$1.50 to HK$127. Its Hang Seng Bank unit soared HK$1.75 to a peak for the year of HK$79.50 on foreign buying. Hutchison and Henderson Land climbed HK$1, to HK$50.50 and HK$58 respectively.

TAIPEI lost 1.3 per cent after China announced that it would conduct ground-to-ground missile tests, at sea and just off the island, between March 8 and 15. The weighted index lost 62.49 to 4,792.74. Turnover was T$38.6bn.

Brokers noted that a T$200bn government-backed stock market stabilisation fund had entered the market to prevent a steeper fall.

The index was lower throughout the session, but a heavy sell-off, especially on high-technology electronic issues started to emerge one hour before the close.

Electronic shares, which had been affected by worries about the future of the semiconductor industry, lost another 2.6 per cent as a group, Winbond slumping 6.8 per cent to T$61.50 and Mosel losing T$3, or 5 per cent at T$57.

But the plastics issue, *Taiwan Polypropylene, rose* T$1 or 1.8 per cent to T$55.50.

SYDNEY fell back, pressured by a lower gold price and the prospect of a mini-budget by the new government.

The All Ordinaries index slipped 15.4 to 2,308.0 in turnover of A$826.7m.

Brokers felt that the prime minister-elect, Mr John Howard, could demand a mini budget on fears that the current year to June budget would produce a deficit, rather than the surplus previously forecast.

The gold index fell 65.5 at 2,146.7, with Placer Pacific 12 cents lower at A$2.67 and Dominion down 15 cents at A$3.25.

SINGAPORE moved ahead on selective demand for blue chips in volume that almost doubled to 146m shares. The Straits Times Industrials index rose 10.10 to close at the day's high of 2,432.38.

The index benefited from a 60 cent rise to S$12.90 in Cerebos Pacific, while Fraser & Neave gained 20 cents to S$19.00.

KUALA LUMPUR remained at a 16 month high as programme buying pushed the composite index up 17.49 or 1.6 per cent to 1,124.39.

Dealers noted that institutions were again active, accumulating blue-chips, as retail investors consolidated their positions after the recent buying spree.

SEOUL was pulled higher by advances in Samsung Electronics and other blue chips in otherwise gloomy trade. The composite index rose 2.62 to 857.72 but decliners overwhelmed advancers 516 to 209 while volume remained thin at 16.9m shares.

Samsung Electronics led the way for blue chips, gaining Won5,500 to Won135,500 after Monday's news that the company would buy back 2.7m of its own common and preferred shares.

Tae Hwa fell Won160 to its lower limit of Won2,580 on rumours that the company would be placed on the exchange's supervision list, due to poor performance.

BANGKOK was weaker in thin trade as poor domestic economic data and disappointing 1995 corporate results kept many investors on the sidelines.

The SET index lost 14.20 at 1,311.66 in turnover of Bt3.8bn.

The commerce ministry on Monday announced that the consumer price index had risen 7.4 per cent year-on-year in February, unchanged from the previous year; and yesterday the central bank said the current account deficit had widened to Bt335.7bn in 1995 compared to Bt208.2bn in 1994.

Brokers said that poor earnings results by several companies in the finance, property and building sectors had depressed sentiment.

MANILA was in a holding pattern as investors digested news of a rise in February inflation figures. The composite index made 2.85 to 2,908.68. Volume narrowed to 5.8bn shares worth 1.8bn pesos.

SHANGHAI's hard currency B index was weak on selling triggered by worries over the outlook for corporate results. The B index lost 0.097 to 52.141 while the A index gave up some of Monday's 9.3 per cent bounce, falling 16.041 to 807.171.

● Bombay was closed for a public holiday.

FT/S&P ACTUARIES WORLD INDICES

The FT/S&P Actuaries World Indices are owned by FT-SE International Limited, Goldman, Sachs & Co. and Standard & Poor's. The Indices are compiled by FT-SE International and Goldman Sachs in conjunction with the Faculty of Actuaries and the Institute of Actuaries. NatWest Securities Ltd. was a co-founder of the Indices.

NATIONAL AND REGIONAL MARKETS Figures in parentheses show number of lines of stock	MONDAY MARCH 4 1996 US Dollar Index	Day's Change %	Pound Sterling Index	Yen Index	DM Index	Local Currency Index	Local % chg on day	Gross Div. Yield	FRIDAY MARCH 1 1996 US Dollar Index	Pound Sterling Index	Yen Index	DM Index	Local Currency Index	DOLLAR INDEX 52 week High	52 week Low	Year ago (approx)
Australia (81)	202.74	0.1	196.70	134.74	155.55	177.47	0.3	3.60	202.57	196.51	135.03	155.44	176.93	202.74	158.79	163.34
Austria (26)	186.38	-0.4	180.82	123.87	143.00	142.83	-0.4	1.60	187.12	181.52	124.73	143.58	143.42	199.28	169.11	189.36
Belgium (34)	212.45	-0.2	206.12	141.20	163.00	158.91	-0.2	3.32	212.82	206.45	141.86	163.30	159.25	215.81	172.97	176.17
Brazil (28)	160.81	1.4	156.01	106.87	123.38	291.02	1.4	1.59	158.57	153.82	105.70	121.67	287.15	170.25	86.06	115.68
Canada (101)	155.35	0.4	150.72	103.25	119.19	154.27	0.7	[illegible]	154.67	150.03	103.10	118.68	153.28	158.71	125.64	126.64
Denmark (33)	303.26	-0.1	294.23	201.55	232.68	235.15	-0.1	1.61	303.41	294.33	202.25	232.81	235.31	305.17	252.41	268.60
Finland (24)	182.79	-0.6	177.34	121.48	140.24	175.37	-0.5	1.97	184.32	178.80	122.86	141.43	176.32	[illegible]	171.13	185.41
France (96)	190.84	-0.1	185.16	126.83	146.42	151.44	0.0	3.08	190.94	185.22	127.28	146.51	151.48	191.17	161.53	166.78
Germany (60)	173.19	-0.3	168.03	115.10	132.88	132.88	-0.3	1.84	173.79	168.58	115.85	133.35	133.35	173.79	142.25	153.90
Hong Kong (58)	439.54	0.4	426.44	292.12	337.24	436.29	0.4	3.27	437.75	424.64	291.80	335.89	434.52	451.19	323.87	[illegible]
Ireland (16)	260.43	0.1	252.67	173.08	199.82	233.20	0.1	3.33	260.24	252.45	173.48	199.68	233.07	262.70	205.44	215.54
Italy (59)	77.98	1.6	75.63	51.81	59.81	90.23	1.0	1.67	76.56	74.26	51.05	58.76	89.31	82.71	65.45	72.99
Japan (482)	149.08	-0.3	144.64	99.08	114.38	99.08	-0.6	0.77	149.59	145.11	99.71	114.78	99.71	164.82	137.75	145.16
Malaysia (107)	537.48	1.5	521.46	357.21	412.38	527.03	1.5	1.60	529.77	513.91	353.14	406.49	519.22	561.98	425.77	466.50
Mexico (18)	1111.48	0.3	1078.36	738.69	852.78	9189.33	0.0	1.61	1108.65	1075.45	739.02	850.67	9202.57	1237.14	647.81	764.15
Netherland (19)	280.81	0.3	272.44	186.62	215.45	211.68	0.3	3.24	279.83	271.45	186.53	214.72	211.01	283.25	227.76	226.89
New Zealand (13)	81.63	0.3	79.20	54.25	62.63	64.38	0.4	4.63	81.39	78.95	54.25	62.45	64.12	85.49	72.30	73.71
Norway (33)	238.83	-0.0	231.71	158.72	183.24	208.31	0.1	2.45	238.83	231.68	159.21	183.26	208.15	243.79	202.76	209.83
Singapore (44)	447.05	0.2	433.73	297.11	343.00	290.85	0.2	1.38	446.30	432.93	297.50	342.45	290.40	465.21	348.10	354.22
South Africa (45)	388.60	-0.1	377.02	258.26	298.15	331.25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Spain (37)	164.59	-0.4	160.51	109.95	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sweden (47)	337.89	-0.2	327.82	224.56	259.23	341.32	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Switzerland (39)	233.18	0.4	226.23	154.97	178.81	173.69	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Thailand (46)	181.18	1.0	175.79	120.42	139.01	177.22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
United Kingdom (209)	232.86	0.4	225.73	154.63	178.51	225.73	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
USA (631)	265.96	1.0	258.03	176.76	204.08	265.96	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Americas (776)	242.52	1.0	235.30	161.18	186.09	203.88	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe (730)	206.41	-0.0	200.26	137.18	158.37	178.89	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nordic (137)	291.61	-0.2	282.92	193.80	223.74	254.75	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pacific Basin (832)	163.09	-0.2	158.22	108.38	125.13	111.52	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Euro-Pacific (1562)	181.04	-0.1	175.64	120.32	138.92	131.07	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
North America (732)	259.13	1.0	251.41	172.22	198.82	258.40	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Ex. UK (523)	187.31	-0.2	181.72	124.48	143.71	158.51	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pacific Ex. Japan (350)	291.24	0.3	282.56	193.56	223.45	253.07	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
World Ex. US (1754)	182.39	-0.1	176.96	121.22	139.94	141.23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
World Ex. UK (2180)	205.62	0.4	199.50	136.79	157.91	172.31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
World Ex. Japan (1903)	240.63	0.4	233.51	159.96	184.66	227.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
The World Index (2363)	208.21	0.4	202.01	138.38	159.75	177.13	0.3	2.12	207.37	201.16	138.23	159.12	176.62	[illegible]	172.24	172.16

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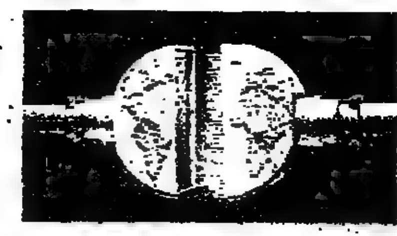
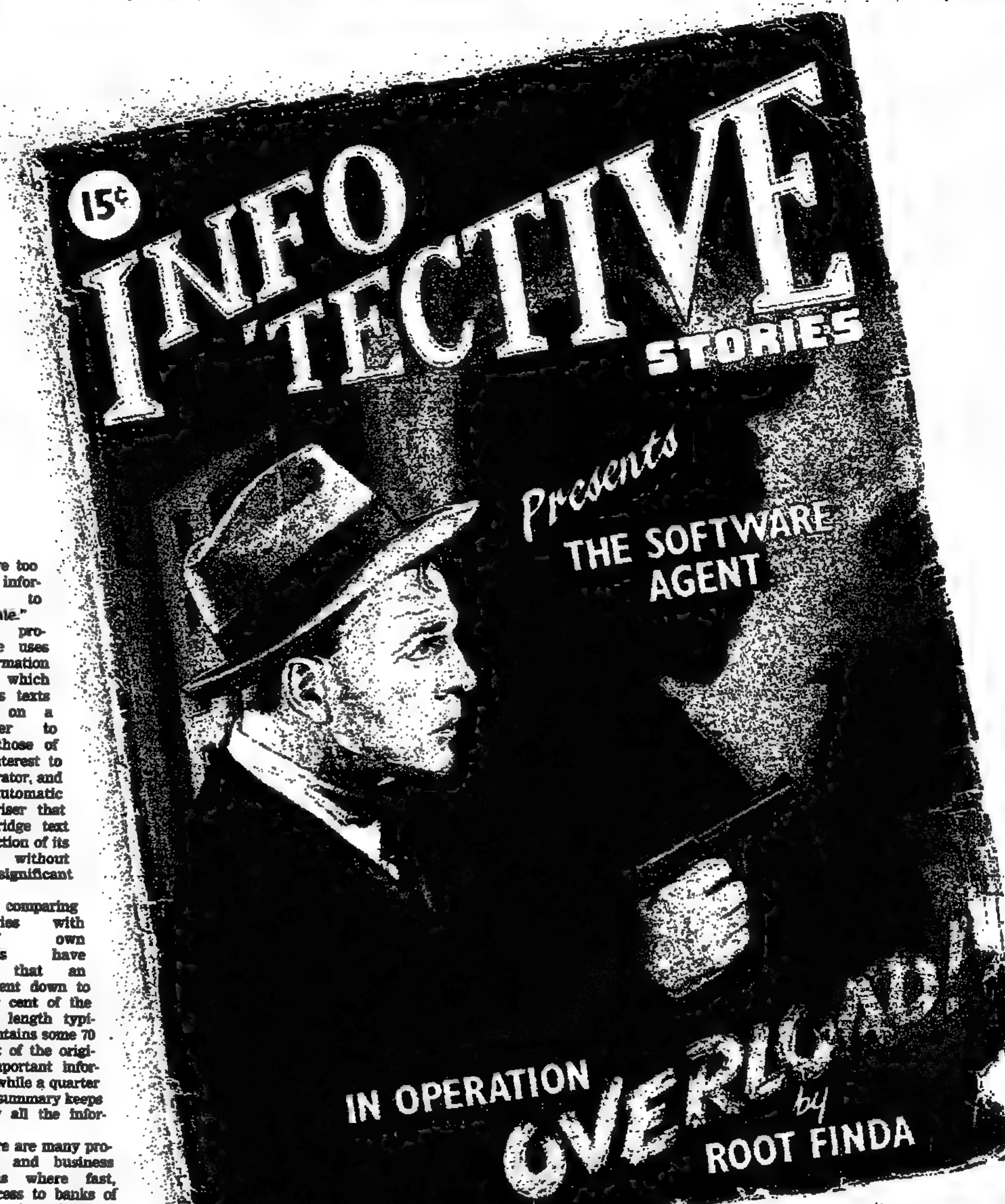


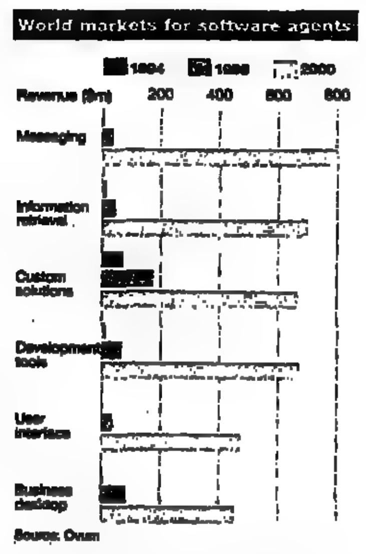
Information Technology

Wednesday **March 6** 1996

Help is on hand from intelligent agents

Just as digital technology threatens to swamp us with information, advanced computer software may also provide a way to sift, sort and manage data in the information age, writes Paul Taylor





The digital revolution is having a profound impact on the sheer volume of data confronting businesses and individuals.

Electronic mail, the Internet and the arrival of digital broadcasting represent an information avalanche which together threaten to engulf us. According to conservative estimates, the amount of data – text, pictures, video and sound – is doubling every three years leading to what has been described as "information overload".

Managing this glut of data – and sifting out important material – is crucial for many organisations which depend on processing information in order to survive. However, over the past few years, a particular type of software programme, called an intelligent, or information, agent has emerged from the laboratory which could alleviate the problem.

Ovum, the UK-based technology consultancy, defines intelligent agents as "objects that think". They comprise a self-contained software programme or routine which is responsible for executing part of a process while making use of information contained in a knowledge base. These intelligent agents typically operate in a distributed computing or client-server environment and address self-contained tasks, working in a semi-autonomous manner and communicating with the user and system resources.

More advanced intelligent agents may communicate with each other, and co-operate to carry out tasks beyond the capability of a single agent. Some intelligent agents have the capacity to acquire their knowledge through learning.

While the commercial application of intelligent agents is still in its infancy, the technology has its roots in the research into distributed artificial intelligence undertaken at the Massachusetts Institute of Technology and elsewhere.

"Intelligent agents are an interesting by-product of artificial intelligence, an area of technology which has traditionally been perceived as one with little impact on business," says Dominique Verdejo of Ilog, the software development tools company. "Intelligent agents are now being increasingly integrated in various industrial applications, most notably in the telecoms sector and for developing enhanced services on the fast-growing Internet."

In the last couple of years, companies such as AT&T, Apple Computer, British Telecommunications, Hewlett-Packard, International Business Machines, Logica and Microsoft have begun to deliver key products and supporting technology.

Other information agent specialists include California-based Verity and executive information system suppliers such as Planning Sciences and Comshare which have begun to build intelligent agents into their products.

In the telecommunications market, intelligent agents with supervision, filtering and correlation capabilities are being used to automate processes in network management. US Sprint, for example, has designed a wide area network supervision application called Clearline, using an intelligent agent to correlate alarms and detect the origins of communications failures.

"Intelligent agents are also being used in the area of electronic commerce," says Ilog's Verdejo. "They are able to move from one machine to another, bringing with them encapsulated data and rules which allow them to negotiate on behalf of their owner in electronic transactions."

Elsewhere, banks are using intelligent agents to make loan decisions and manage credit risk.

However, managing information is probably the biggest and most immediate market for intelligent agents. Among specific applications, the *Office of Media Affairs* at the White House receives hundreds of requests for information via the Internet each day. It redirects these requests through an agent-based publication server at MIT that uses formal language techniques to determine which documents the authors should receive.

BT, along with several other developers such as IntelLX, has developed a programme which it claims "offers effective answers to 'information overload' – where people have too much information to assimilate."

Its programme uses an information agent which searches texts stored on a computer to select those of most interest to the operator, and an automatic summariser that can abridge text to a fraction of its length without losing significant detail.

Tests comparing summaries with authors' own abstracts have shown that an abridgment down to five per cent of the original length typically contains some 70 per cent of the original's important information while a quarter - length summary keeps virtually all the information.

"There are many professions and business functions where fast, easy access to banks of data has brought huge advantages in terms of availability, but there is a parallel disadvantage as well," said Keith Preston, of BT's natural language group when the Summariser technology was unveiled last year.

"The fact that there is now so much 'on tap' means it threatens to overwhelm the very people who need to absorb it – whether they are doctors or dentists needing to keep abreast of the latest research, lawyers collating case material or businessmen sifting through company and market information."

Others to exploit this new agent technology include Comshare, the decision support specialist. It has added a feature called 'Detect and Alert' to its executive information system, financial reporting and retail planning applications which run on client/server networks.

Detect and Alert software agents, which Comshare calls robots, perform time-consuming, repetitive tasks and monitor targeted databases for significant changes. When a change is detected, an alert can be flashed to the user or flagged in a user's personalised electronic newspaper.

"Agent-based systems represent the next generation of strategic weapons for information management," says T Wallace Wrathall, Comshare's chief executive.

Planning Sciences – formed by a group of former Lucas Industries software engineers – have already taken the technology a step further, building wandering information agents capable of working across a geographically dispersed network, into its latest version of Gentium, a highly sophisticated enterprise information system.

"Given the amount of information managers are asked to absorb, this type of programme is becoming essential," says Mr Ian Rawlings, Planning Sciences' marketing director. "Companies are looking for a competitive edge, this gives it to them."

Gentium offers a range of agents including director agents, which watch computer directories for content changes; extractor agents which extract data from text files; phone agents which manage telephone connections for modem access to remote systems; process agents which manage the process, and bookworm agents which control the replication of data and objects.

Meanwhile, Verity's Topic software agents link the Internet, the internal network and CD-Roms, instantly searching, filtering and delivering personalised information from anywhere in the world, "right to the user's desktop".

"One of the greatest challenges facing large corporations today is how to deliver information that is scattered throughout the enterprise and the Internet to scattered users in a timely, relevant and cost effective way," says Philippe Courtot, Verity's chief executive.

Verity's Topic search engine is already embedded in Lotus Notes, Adobe Acrobat and more than 200 other publishing products. On the Internet, Topic has been chosen by Netscape and Quarterdeck among others. For example, Quarterdeck's new WebCompass programme enables PC users to perform searches on multiple World Wide Web search engines such as Yahoo, Lycos, WebCrawler and Digital's AltaVista from a single location, organise and index the data for storage on the PC and automatically update databases by performing regular searches.

"By the end of the decade, intelligent agent technology will have come to pervade our interaction with information technology, our desktop working practices, and many of the support services we use at home," predicts Ovum, which believes the worldwide market for agent software could grow from $37m in 1994 to $2.6bn by the end of the decade – led by information retrieval.

"Intelligent agents promise to provide electronic secretaries which will arrange your meetings and manage your diary; electronic librarians, which will retrieve the information you want from on-line sources; and a tireless workforce of office and factory staff, which will constantly carry out repetitive tasks with a degree of intelligence.

"Where the word processor supported an electronic typing pool, intelligent agents for the office will ease access to information and services for non-technical users. Agent technology can enrich workflow applications, and provide flexible easily updated process automation."

Fortunately, therefore, just as digital technology threatens to swamp us with information, digital technology may also provide the means to sift, sort and manage data in the information age.

"Intelligent agents will increase the performance gap between organisations which use IT effectively - and those which don't," warns Ovum.

■ Sir Peter Bonfield

'The key element is network management'

Sir Peter Bonfield, chief executive of British Telecommunications and former chairman of ICL, the computer company, has an uncommon mastery of the technologies which underpin both industries. He is interviewed here by **Alan Cane**

The appointment late last year of Sir Peter Bonfield as chief executive of British Telecommunications, the world's fifth largest telecoms operator, is a clear indicator of the future direction of the information technology industries.

Sir Peter, formerly chairman and chief executive of ICL, the UK-based computer company owned by Fujitsu of Japan, has no direct experience of running a telecoms company. BT is four times the size of ICL and still has some way to go in making the change from a bureaucratic, state-owned monopoly to market-driven, competitive organisation.

Bonfield is, however, known for management skills and strategies which have kept ICL in the black over the past five years while larger rivals have been left floundering in red ink.

He also has an uncommon mastery of the technologies which underpin computing and, increasingly, telecoms: "Big switch technology" he points out "is going to be computer based. Switches will be built up out of standard microprocessors: the software will be disconnected from the hardware and the key element is network management. All of this sounds very much like the computer business."

Bonfield, like, for example, Mr Ron Sommer, head of Europe's largest telecoms operator, Deutsche Telekom, is one of a new breed of telecoms executive whose skills, honed in different but related industries, are now critically important to the telecoms business.

Sir Peter: 'The big question is whether the consumers will really find this technology useful'

Both have experience of consumer electronics. Mr Sommer was formerly head of Sony Europe. Bonfield worked for Texas Instruments before the move to ICL. And both have experience of running companies in industry where competition and technology has forced down profit margins. The telecoms industry, hugely profitable at present, can expect to see margins tighten and profitability shrink by the turn of the century for much the same reasons.

The computer industry, Bonfield points out, has been through a pain barrier: "You are talking to companies who are competitors one day, collaborators the next and partners the next. Until recently, this has not been common in the telephone business."

Even if the technologies are similar, he is not persuaded by the idea of convergence between computer and telecoms companies, pointing to the failure of NCR to thrive within AT&T as an example of the cultural divide between the industries: "In some of the newer areas there may be links, perhaps joint ventures or new companies set up by combinations of telecoms companies and computer companies," he says. Mr Takuma Yamamoto, president of Fujitsu, warned Bonfield that he might find the move to telecoms "boring". After two months in the business, however, Bonfield is finding plenty to interest him.

"It is the combination of several things happening at once. Changes in the laws which regulate telecoms, particularly in the US, are driving huge amounts of activity. Companies are getting into markets from which they were previously barred."

"There is a lot of activity between players who would not have been easy bedfellows last year or the year before," he says, pointing to the link up between MCI, the second largest US long haul operator and Mr Rupert Murdoch's News International and the deals that a wide variety of customers are striking with Microsoft, the largest US software house.

"The other big issue everywhere is the approach of regulators to how a competitive business should be set up."

A significant difference between the computer business and the telecoms business, of course, is the presence of regulation. Most telecoms companies are still state-owned monopoly operators.

Where they are privatised and the market liberalised, as in the US and UK, regulators are imposed to protect customers from undue price rises and to oversee the emergence of a competitive market.

A regulator can affect profitability markedly. BT has returned about £1bn to its customers in the form of price reductions over the past few years through a formula which regulates many of its prices.

It is a global problem. Bonfield points out: "One of the things we are saying to regulators around the world, and not just in the UK at the moment, is that the risk-return profile [a measure of an investor's likelihood of making a return from an investment] of telecoms companies in the future will be quite different from the past.

"Regulators should not look at them as a utilities offering safe and substantial returns: there are technology risks, market risks, life cycle risks of the products and services. All of this makes the business harder to read, so we need an adequate return on investment."

He accepts that margins are going to be squeezed, and emphasises the need for cost-savings: "The emphasis has to be on whether we can grow the market with new services to offset the squeeze on margins. As a first impression, it seems to me easier to do this in telecoms than in computers."

He has in mind the value-added services such as call-minder and call-back, based on conventional technology or on-line services such as BT's "Wireplay", online videogames played over the public network and currently being tested in the UK.

How should the interests of the customers and the shareholders be reconciled in a company such as BT?

"The balance," he says, "lies in how we put our investments together. Our intention is to be a world-class telecoms company and that means a BT that is not simply bound into this small island. We have to make decisions about what we invest in the network and customer service here against our international aspirations."

"In reality, we are still investing a huge proportion of our available assets in the UK domestic market. We will need to skew that towards the international side over the next few years. That will force us to be much more efficient in utilising the capital that we are putting into the UK."

> Bonfield's search will be closely watched by competitors

Bonfield explains that he is seeking innovative ways of expanding the reach and serviceability of the UK network "without the classic way of doing it all ourselves".

Bonfield explains that the range of options he is considering includes sharing the risk of developing new products and services with the companies suppliers: "At the moment, most of it is still on BT's nickel."

"We don't yet know the answer," he says, "but somewhere there has to be a way to free more resources to develop our international activities. We do not want to deplete one to fund the other. We've got to do both and be more innovative in how we do it."

Bonfield's search for ways to strengthen BT's international activities will be watched closely by competitors from both East and West. AT&T, the largest US company, claims to be tackling the UK market seriously: "I do not think anybody here is under any illusions about AT&T's ability to be a good competitor, although it may take it some time to build up customer numbers," Bonfield says.

Deutsche Telecom, France Télécom and Sprint of the US seem to have the green light to challenge BT and MCI's Concert alliance for international customers.

A member of a number of high level committees examining and advising on the future of the industry, Bonfield has concerns which go beyond simple competition – "the big question is whether the consumers will really find this technology useful," he says.

"Will it generate this utopia of a future where we will all be more efficient, more perfectly informed and better entertained?

"Or will the technology simply cause 'technofear', with continued worries about unemployment and so on. The industry itself has got to tackle that. If the technology simply generates hostility, we will not get very far."

■ Nicholas Negroponte, MIT guru

Middle-sized companies most at risk in digital future

Some of the most informed speculation about the future of information technology comes from Nicholas Negroponte, the US academic who is also a columnist in the influential US magazine *Wired* and author of *Being Digital*. Nicholas Negroponte, director of MIT's Media Lab talked to **Joia Shillingford** at the World Economic Forum in Davos, Switzerland

"We used to think of information technology as a device that sat on the desk or fitted into a pocket – today, it is woven into the fabric of our lives," says Nicholas Negroponte, director and co-founder of the Media Lab at the Massachusetts Institute of Technology (MIT).

He believes the increasing digitisation of information – turning video, text and sound into streams of bits that can be sent over global networks – will have far-reaching effects on industries and individuals.

Impact on industry

"If an industry can be turned from atoms of matter into bits of information on a computer, it will be threatened quickly by the digital revolution," says Negroponte, author of *Being Digital*. "If it can't (such as with hamburgers or milk), the transition will be slower."

For example, the atoms in a coin or banknote will increasingly be replaced by credit card payments and digital cash. "1996 will be the year of digital cash," says Negroponte.

The banking industry is in big trouble, he adds, unless bankers can find a way of adding value to the bits. They will have to become participants in the digital world and show that they can keep your bits (of electronic money) safely for you.

Other industries threatened by the replacement of atoms with bits include telecoms companies and publishers. According to Negroponte: "The transport of bits (over phone lines) is a crummy business.

"The people who will make money are the people who make the bits, add value to them, own them or protect them. Disney, which owns lots of bits (such as digitised video and images), can distribute and use them in new ways."

Previously, says Negroponte, publishers have been in the atom business – for example, delivering newspaper pages made up of atoms. But with the growth of online publications, they will increasingly be delivering bits.

This will change the economics of publishing and lead to "disintermediation" – or loss of the middle. "The digital world gets bigger and smaller at the same time, and the middle falls out," says Negroponte.

"There is little room for middle anything: middle managers or middle-sized companies."

Big organisations can offer a wide variety of content. Medium-sized organisations have little advantage over small ones once the cost of entry for publishing (on the Internet, for example) is lowered.

"There will be Rupert Murdoch at one end and a Moroccan housewife with a couscous file server on the Net at the other, and nothing in between," predicts Negroponte.

One casualty of this changing world will be academic journals publishing new material accompanied by peer reviews (such as those published by Reed Elsevier).

A peer review can take a year and a journal can cost £300-£1,000. Negroponte believes "this will be a dead business in the next few years. Faculty won't be publishing that way." He expects this sort of article to be published online instead.

"Publishers will end up being talent scouts," says Professor Negroponte, who is also a founder of, and writer for, *Wired* magazine. "They will discover authors and publish them. But once the authors are as well known as Douglas Adams or Michael Crichton they won't need a publisher – they'll put their work online themselves."

However, putting publications online also creates new ways of presenting information. The Fishwrap project at the Media Lab seeks to make news stories more meaningful depending on the audience.

For example, a report on a disaster (such as Bhopal) could describe how it destroyed a town the size of Boston if being read by Bostonians or the size of Manchester if being read by Mancunians.

A weather report for Alaskans could describe 55°F as a "warm 55 degrees," whereas one for people living in Florida would describe it as a "cool 55 degrees".

Television is also set to change. As digital television channels become available, TV will become a form of data broadcast, which broadcasts digital video on some channels, some of the time but at other times broadcasts data or digital radio.

"TV broadcasters have to get into the data broadcast business," says Negroponte. He sees television as getting more interactive. Instead of a few cameras trained on a football match, you could have cameras capturing every point of view, so that viewers could decide what they wanted to look at.

Impact on individuals

In other ways, too, Negroponte expects the digital revolution to give people more choice. He says: "Now we live a very synchronous existence, with large numbers of people watching the same television programme at 8pm or working from 9am-5pm.

"But life will become far more asynchronous and personalised. People will be able to watch what they want when they want, and work where and when they want."

Some people have concerns about the blurring between work and personal lives that technology makes possible. But Negroponte believes there is a trade-off. "I'd rather answer e-mail on a Sunday and be in my pyjamas longer on Monday," he writes in *Being Digital*. In the longer term, what he calls "things that think" could enhance everyday life. For example, the fridge could send a message to your car reminding you to get some milk on the way home. Or your car could log on to the Net and download a weather forecast.

"The future of IT is buried in all the other areas of our lives," says Negroponte. This is why MIT's Media Lab takes a multidisciplinary approach to predicting and inventing the future.

Half the 350 staff on the Media Lab payroll are computer scientists; the rest are drawn from all walks of life including photography, film-making, architecture (Negroponte's first degree subject at MIT) and so on.

When the Media Lab was founded in the early 1980s, the idea that video, publishing and computer interactivity would enrich each other seemed far fetched to some. But it has been vindicated by growing convergence between the information, entertainment, telecoms and computer industries.

Today, the Media Lab is funded to the tune of $25m by 180 companies in a wild mix of industries: not just IT and telecoms, but also toys, clothing and furniture. Sponsorship is drawn 50 per cent from US companies, 25 per cent from Europe and 25 per cent from Japan. Sponsors include IBM, BT, Lego and Reuters.

Of the 100 projects in which the Media Lab is involved, most fall into three groups: learning and common sense; perceptual computing; and information and entertainment.

They range from computer-based intelligent agents which help pick music you will like (learning and common sense) to front door knobs that recognise you (perceptual computing) to three-dimensional TV (information and entertainment).

In the future, says Negroponte, you may buy a television in a paint can and literally paint it on a wall. Or wear a computer in a sports shoe that is powered by walking and communicates with your wristwatch. When he says IT will be part of the fabric of our lives, he is not always being metaphorical.

Nicholas Negroponte: 'Publishers will end up being talent scouts'

FT IT

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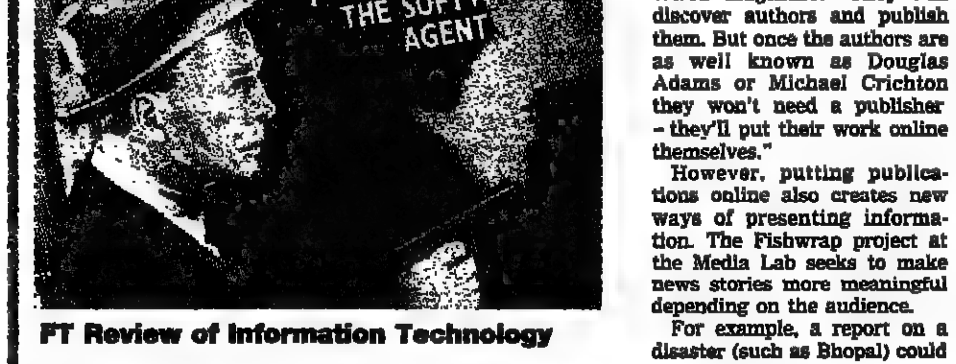

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■ Profile: Marco De Benedetti – By Michael Dempsey

Energetic and nimble newcomer

Marco De Benedetti is managing director of Olivetti Telemedia, which exists to exploit the convergence of telecoms and data transmissions.

Marco De Benedetti, one of three sons of Olivetti chairman Carlo De Benedetti, manages Olivetti Telemedia. Family succession is not a common feature in the IT industry, but then, the technology world is still a newcomer in terms of industrial history.

The 34-year-old Marco owes his MBA and early experience to more traditional business institutions in the US, including Procter and Gamble and New York investment bank, Wasserstein. This type of background usually produces a distinctive product, but Marco De Benedetti has emerged unscathed from an immersion in formal American business practice.

Sporting brown suede shoes and toying with a mobile phone in a display of impatient energy, he is recognisably European.

Telemedia is a multimedia and telecoms venture that carries responsibility for Carlo De Benedetti's grand plan to steer the computer-maker away from the competitive personal computer market, with its ever-diminishing margins.

Telemedia exists to exploit the convergence of telecoms and data transmissions. Telemedia was formed in 1994 and has already notched up a string of significant international deals. Infostrada is a joint venture with Bell Atlantic that has gone on to establish an operation with France Telecom. This will create Italy's second fixed-line phone network, an alternative to Telecom Italia. Hughes Olivetti Telecom will market satellite telecoms services with Hughes Network Systems. Videostrada is a joint venture with US West to develop local cable networks in Italy.

Olivetti's Cambridge Laboratories are a hub of Telemedia activity: this is where much of the company's research into the emerging Asynchronous Transfer Mode, or ATM, technology is based. ATM is perceived as a crucial delivery mechanism in the race to get voice, data and visual images flowing down telephone lines and emerging coherently for commercial and domestic customers.

De Benedetti is based in Milan but visits Cambridge once a week. He is sanguine about what sounds like a hideously complicated acronym – "maybe ATM is not a nice word, but the concept is very simple. It provides a standard for multimedia applications," he says.

This multimedia marketplace has an estimated value of

Continued on page 7

Marco De Benediiti, 34, claims that Telemedia, formed in 1994, will be nimble enough to survive in an unpredictable world

The journey ahead

is momentous, remarkable and full of hazards. Choose the most careful and experienced guide.

The **Worldwide Web** of today's Internet offers a tantalising foretaste of even greater wonders to come. Soon, the ability to access and exchange any combination of text, data, voice messages, sounds and moving images instantly will be commonplace. But while a net can be a great gatherer of riches of all kinds, can it not also be a snare for the unwary? At NEC we have no such fears. Our **Multimedia Office System** is already demonstrating the future: mobile computing seamlessly combined with multimedia on demand and multimedia collaboration is now a reality. It's the result of over 20 years experience in integrating computer and communications technologies. In fact, thanks to our long-term investment in research and development, we are unique in having expertise in every aspect of multimedia. So when you're looking for a guide through this new world, remember NEC has shaped every step of its evolution.

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the multimedia evolution

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FT IT

Digital systems reshape the working world

Here and on the following 12 pages, FT writers examine the impact of the integration of computer and telephone technologies

■ The advance of digital technologies – By Paul Taylor

Raw power of the Information Age

The steady advance of digital electronic systems, based on the 'ones and zeros' of binary computer language, is sweeping away the remaining distinctions between data processing and telephony, leading to the dawn of a new information age, epitomised by the growth of the Internet

Digital technology has made it possible to convert words, sounds, pictures and moving images into coded digital messages which can be combined, stored, manipulated and transmitted quickly, efficiently, and in large volumes without loss of quality.

As a result, electronic commerce and the multimedia revolution are driving the computing and telecoms worlds into ever-closer contact, forcing two industries with traditionally different histories and cultures to compete and co-operate.

The relentless advance of semiconductor technology, the emergence of a personal computing standard and the shift to distributed computing and inter-networking are providing the raw power for the 'information revolution'.

Meanwhile, a wave of privatisation and liberalisation is reshaping the competitive environment for telecommunications services around the globe. In response to the intensified competition and reduced margins on basic telephone services in liberalised telecom markets, network operators are building new computer-driven intelligent networks in order to offer a wide range of value-added services.

Similarly, the growth of interest in mobile telephony reflects the impact of liberalisation and competition in many of the larger world telecom markets including those in Europe where the arrival of digital cellular networks based on the GSM (Global System for Mobiles) standard has prompted a surge of subscribers in markets such as Germany, Britain and France.

Within the next few years, voice and data systems based on the latest low-earth orbit satellite technology, such as the Iridium system, hold out the prospect of truly global mobile telephony. Such systems may well be paired with in-office digital cordless systems to provide the ultimate in cordless connectivity.

Outside the office, high speed modems, ISDN digital telephone lines and the unprecedented growth of the home computing over the past two years has helped begin to turn teleworking into a real possibility for a growing segment of the workforce.

Other technologies such as cable modems, hybrid fibre/coaxial systems and ADSL which uses traditional twisted-pair telephone wires, offer the prospect of almost unlimited bandwidth to the home. These technologies foreshadow a looming battle between rival cable TV and telephone network operators over which systems will deliver video-on-demand, video games, home-shopping and banking and other interactive consumer services to the home.

Already, there has been a rapid increase in digital transmissions using coaxial and fibre-optic cables, wireless systems and satellites. "These advances in digital storage and transmission will deepen the convergence of industry sectors that, until recently, were considered quite distinct – communications, entertainment, computer hardware and software, consumer electronics and informational content," says Microsoft, the US software group, in a white paper called *Creating the Global Information Society*.

"They will also create new opportunities for individuals and institutions to create, purchase or sell, and use a new generation of abundant electronic content – the heart of the new information society," predicts Microsoft.

Digital technologies are already enabling companies and other organisations to improve productivity, accelerate product cycles and compete more effectively in the global markets of the 1990s.

Reflecting this, corporate spending on IT, particularly telecommunications, continues to grow rapidly. For example, a survey conducted in Britain among 1,000 IT executives in leading UK businesses, by Price Waterhouse, the accountancy firm, found that the average IT budget rose by nine per cent in 1994/95.

Spending on telecoms soared by 45 per cent in the year to last April. As a result, telecoms now account for 8 per cent of total IT spending, up from 6 per cent a year earlier. "The sharp increase reflects the growth in computer networking and in the integration of telephone and computer technology, which is transforming the way companies service their customers," says Price Waterhouse in its annual IT Review. However, the report's authors note that "integrating IT and business objectives remains the number one management issue as concern with cost-control diminishes."

In Britain, the ratio of spending on mainframe computers to PCs is now 51:49 among UK businesses, compared to 60:40 a year earlier. As Mr Ekhard Pfeiffer, president and chief executive of Compaq Computer, the world's largest PC manufacturer, notes, "the pace of change in the computer industry is dramatic".

Today, the PC can be used as a telephone, a fax, an answering machine and television, a node of the office network or a gateway to commercial online information services and the Internet. In business, the PC offers an available, highly affordable, and scaleable tool.

For many traditional computer manufacturers, such as IBM, Digital Equipment, Unisys and others, the changes which have swept across the industry over the past 10 years have resulted in a painful period of transition.

With hardware margins under constant pressure, some – including Unisys and ICL in the UK – have decided to refocus their operations and have moved aggressively into the IT consulting, systems integration and computer services business which also includes the rapidly growing market for IT outsourcing.

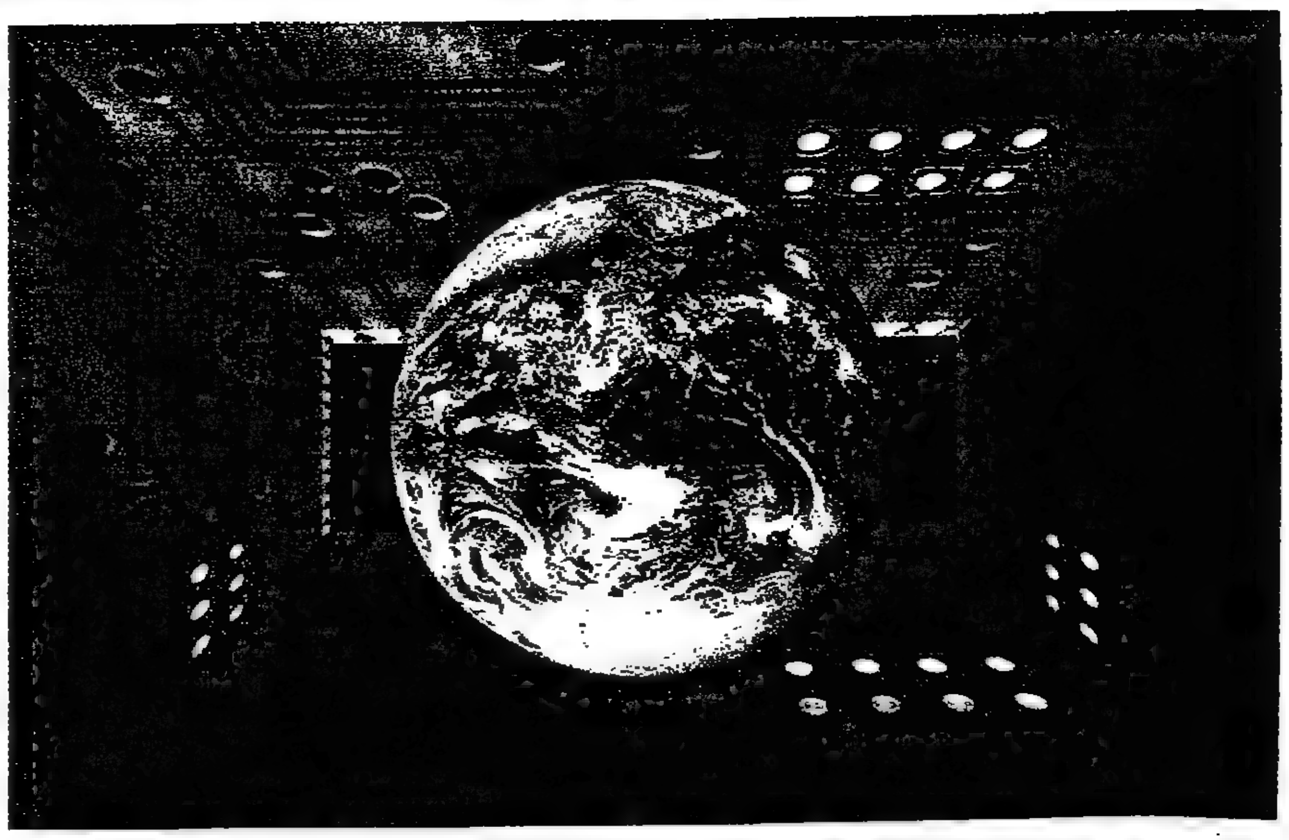
The shift of focus to desktop PCs has thrown up a new group of computer industry leaders. These include Intel, the US chipmaker whose microprocessors power the vast majority of the world's PCs, and Microsoft which has come to dominate most segments of the software market with its Windows and NT operating systems and its Office and Back Office suites helped by a recent marked shift towards packaged software.

Last year, more than 60m PCs were sold, buoyed by particularly strong shipments of multimedia home PCs which are growing twice as fast as their commercial counterparts. This surge of PC computing power into the home is setting the stage for a battle between the PC and the TV to determine which will emerge as the dominant multimedia and interactive entertainment platform.

For people such as Mr Pfeiffer, there is no contest. Compaq, which already dominates the market for commercial applications server, is predicting not only multiple PCs in the home, wired together with a home server, but also "a proliferation of computing platforms for communication, information access and entertainment."

Looking towards the end of the decade, Mr Pfeiffer says: "We see a world not just of basic connectivity as we have today, but also wide area information access and collaborative computing drawing on today's tools like Lotus Notes as well as new Internet tools under development.

"In short, we see a world in which everyone in a company will have access to and work from the same, totally refreshed data that represents what is happening in the world at that moment."



■ Electronic commerce – By Paul Taylor

Fresh opportunities in a vibrant marketplace

Any network used for electronic commerce has to address security

The recent rapid growth of the Internet and inter-networking has focused attention of the new opportunities for electronic commerce, not only as a means to cut costs and improve efficiency, but also as a way to tap into a new and vibrant emerging marketplace.

"Electronic commerce, already developing in fledgling form on the Internet, opens up a range of new possibilities. It extends the reach of small businesses by enabling them to sell into markets they may never have dreamt of entering by conventional means," says a discussion paper prepared by Barclays Bank. "Plus, it may offer them the prospect of buying products and services from new suppliers in other parts of the world that they would not previously have though of approaching."

Broadly, electronic commerce enables consumers to use a variety of on-line terminals and public or private electronic communications networks such as the Internet, to purchase goods and services from the comfort of their own homes or wherever they happen to be. Although electronic commerce is in its infancy, some forecasters predict that it will account for as much as $200bn in expenditure by the end of the decade.

Electronic commerce requires three components: an online terminal, a payment mechanism and a public or private communication network to make purchases. Crucially, argues Victor Millar, president and chief executive of AT&T Solutions, electronic commerce requires "building a secure and stable system." This factor, he believes, could give telecoms groups – which have historically had to deal with these issues – an advantage over their upstart computer rivals.

Any network used for electronic commerce has to address key security issues to ensure confidentiality and authenticity and win the confidence of consumers. There are two main approaches to this – using encryption techniques to secure existing payment methods or the use of electronic cash such as Digicash, Cybercash and Mondex initiatives.

According to Kelly Knutson, senior vice-president of Visa International, any electronic commerce system will have to satisfy four basic security concerns; privacy of the data, integrity of the data, authentication of both the buyer and the seller and making sure that the order is received and processed and verification is sent back to the buyer.

At the start of last month, Visa and its arch rival, Master-

Victor Miller: crucially, electronic commerce requires 'building a secure and stable system'

Card International, agreed to work together on a technical standard to safeguard payment card purchases made over open networks such as the Internet. Before this, the two credit cards had been pursuing separate specifications.

Even ahead of this, the race to set up shop in cyberspace is on. Massachusetts-based Open Market, an Internet commerce provider, listed just 588 commercial sites in its Web sites index at the end of September 1994. By the start of September last year, that number had jumped to almost 12,000.

According to a recently published NOP Research Group survey on commercial use of the Internet, more than 150,000 people in Britain have already used the Internet to purchase products and services in the past six months. "The Internet is still very much in its early stages as a commercial tool," said Rob Lawson of NOP, "but our research suggests that the volume of those willing to consider a purchase in the next six months is almost three times those purchasing in the last six months."

The Barclays paper says: "Electronic commerce has the potential to challenge the business model – the relationship between banks and customers. Banks will need to study the underlying value chain – how and when value is created and delivered to the customer – to identify their strengths and weaknesses in this new scenario. As the balance in delivery channels changes between branch networks and electronic networks, so the control of the delivery channel gradually passes from the financial services providers into the hands of third parties. At the same time, the barrier to entry for new competitors – the need to build up a large branch network – disappears.

Already the Internet has its first network-only bank. Security First Network Bank opened its virtual banking doors for business in mid-October. Forrester Research heralded SFNB's debut as "another Web wake-up call for the financial services industry." As Forrester points out, a bank's physical scale means little in a virtual world.

Similarly, SRI International, another research firm notes: "the potential of the Internet for Commerce is more far-reaching than the vision of traditional electronic data interchange (EDI). Although speedier transactions and decreased paperwork are certainly part of this vision, conducting business on the Internet is ultimately motivated by a more fundamental concern – bringing the operations of a business closer to the customer.

"The Internet can serve a critical role in allowing companies to establish and maintain relationships with their clients, which in turn allows them to become more responsive to clients and to promote sales of additional products and services."

■ The commercial Internet – By Louise Kehoe in San Francisco

'If you can't beat the Net, join it'

Commercial online information services have suffered a high-speed, head-on collision with the Internet

Just a year ago, it was possible to draw clear distinctions between the Internet – an unregulated, chaotic but exciting new world of online information resources – and the more structured environment of consumer-oriented online information services.

Today, with online services such as CompuServe, America Online and Prodigy all offering Internet access capabilities, such distinctions are no longer clear. The picture if further muddied by the fast growth of national and local Internet access services and the development of branded Internet "communities".

Convergence is hardly the best word to describe this rapid industry transformation. Commercial online information services have suffered a high-speed, head-on collision with the Internet.

The fallout is most clearly demonstrated by Microsoft's decision to redefine the Microsoft Network (MSN), introduced last August as a new online service, as an Internet-based service and subsequently to scrap plans for proprietary software designed to create multimedia electronic publications for MSN.

Prior to the launch of MSN, established online information companies feared that Microsoft would use its near monopoly in the market for personal computer operating system software to gain an unfair competitive advantage in the online information services arena.

Industry analysts predicted that MSN would quickly become the world's largest consumer-oriented online service. The US Justice Department entered the fray by investigating the potential anti-trust implications of Microsoft's plans.

Yet such concerns quickly evaporated as MSN failed to live up to analysts' expectations. In December, Microsoft announced that it had changed its plans for MSN and would, in future, direct its efforts at creating products and services built on Internet standards.

Bill Gates, Microsoft chairman and chief executive, acknowledged that his company had been slow to respond to the rapidly growing popularity of the Internet and vowed to put Microsoft in the forefront of the market for Internet software.

Established online information services have also been forced to adapt. Prodigy, a joint venture of Sears Roebuck and International Business Machines, moved quickly to add an Internet "Web browser" to its services. Compuserve and AOL quickly followed suit.

But the blending of Internet and proprietary online services does not stop there. Prodigy has embraced Internet software standards and is redefining itself as an Internet-based service. This "if you can't beat the Net, join it" strategy is similar to Microsoft's new approach.

America Online is hedging its bets. As the largest commercial online service with more than 5m subscribers, AOL is not ready to succumb to the Internet frenzy. While it offers subscribers a link to the Internet with a high-speed Web browser, AOL remains a distinct entity.

The company has, however, established a new subsidiary through the acquisition of Global Network Navigator, a pioneer of Internet-based information services. GNN combines its own content and that of publishing "partners" with services aimed at making the entire Internet easier to use.

GNN is "pitched to mass market America", says Lisa Gansky, vice president of marketing. "We aim to give users a powerful experience of the Internet in their first hour online."

In the first three months after its launch, last autumn, GNN attracted more than 100,000 subscribers; its Internet site is being visited by half a million people a month.

Compuserve has taken a similar "market segmentation" tack. In addition to its flagship online information services, CompuServe has launched an Internet access service called Sprynet with unlimited time on the Internet for a fixed monthly fee.

This month CompuServe will also launch a new service – called Wow! – aimed at the first-time online user who might be intimidated by the scope and power or the Internet.

Competition

Making use of its established network, Compuserve is offering local access throughout the US and in many other parts of the world. This puts it in head-to-head competition with US national Internet access providers such as Netcom and PSI, as well as local access providers.

As commercial online services begin to compete with Internet access providers, one of the critical issues is advertising revenues. While online advertising is a relatively new phenomenon, it is growing rapidly.

For online services, advertising represents an alternative source of revenue to offset the effects of intense price competition in subscriber fees. To sell advertising "space", however, these services must demonstrate their abilities to maintain the interest of subscribers in their own information services, rather than being simply a route to the Internet.

In this rapidly changing market, new developments include the use of "content sensitive" advertising in which online commercials are tailored to the interests of individual users by tracking the Internet sites that they visit. Online services that can deliver large numbers of users to specific Internet services, such as Internet directories, might also win a share in advertising revenues generated by those sites.

As the commercialisation of the Internet moves apace with the introduction of fees for access to electronic publications, online services also see an opportunity to become the managers of the "toll booths" on the information highway, providing subscribers with "free" access for a set monthly fee.

The outcome of this market battle has yet to be seen. It appears, however, that marketing savvy and the ability to create high quality electronic publications may win the day. In this regard, the world of online information services is remarkably similar to traditional publishing media.

New services target home users: see facing page

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■ Online services – By Stephen McGookin

Lure of unpredictable treasures

Lucrative potential for mass expansion is thought to lie in the mainstream commercial services aimed at home users

When considering the phenomenal recent growth in the market for online services, we have to distinguish between Internet access providers, of which there are now a couple of hundred in the UK alone; business-related information services, and the commercial proprietary networks which offer a range of content, such as CompuServe or America Online.

The access providers – of which Demon Internet and Unipalm Pipex are successful examples – have concentrated on low-cost connections for people keen to get straight to the Internet, while "the battle for desktop real estate", as Michael Bloomberg once put it, means that success in the highly-competitive, premium-priced business sector is measured in timeliness and volume of research intelligence.

There are a growing number of services – PhoneLink's Tel-Me service, for example, which offers a wide range of travel and directory information – serving the personal and small business user. But it is the third grouping, the mainstream commercial services aimed at home users, where lucrative potential for mass expansion is thought to lie.

The US Market research firm Simba Information last year predicted that the number of subscribers to consumer-based online services would increase by about 66 per cent to more than 11m worldwide in 1995 – with that number more than doubling by 2000.

CompuServe was the first commercial online service to make a significant breakthrough in Europe. Its huge range of diverse, premium-rate subject forums initially overwhelming many first-time users, but nevertheless whetting their appetites for more imaginative services.

CompuServe currently boasts upwards of 3.5m members worldwide and says it is adding about 150,000 users each month. It has about 400,000 users in Europe, concentrated in the UK, France and Germany, and about 160,000 in Japan through an alliance with NiftyServe.

America Online – unrelated to either UK Online or Europe Online – is probably the world's fastest-growing online service, with 7m users worldwide. It launched in the UK at the beginning of this year and in France this month in collaboration with German media company, Bertelsmann. It launched in Germany before Christmas, with regional content as well as the US-based service available. Like CompuServe, access to the World Wide Web is integrated within its online service.

Prodigy is the smallest of the three leading US online networks, with about 2m subscribers. While content providers such as the *Los Angeles Times* may have forsaken it in favour of the Web, it says it has added about 200 content subject areas since April, which it may open to non-Prodigy users if it can work out a charging arrangement.

> The swiftly growing America Online service now has 7m users

The Microsoft Network is the manifestation of the world's largest software company's ambitions for a global online service. It is available in 52 countries worldwide. Having ridden early industry and regulatory worries about its potential market domination due to it being launched along with the new Windows 95 upgrade software, it limited itself to an initial 500,000 subscribers.

Delphi, launched in 1981, was bought by Rupert Murdoch's News Corporation in 1994 and has about 140,000 subscribers worldwide. It is providing content including a link to *The Times* through its Web site (*www.delphi.co.uk*).

Apple's eworld, which comes packaged with Macintosh computers and was launched in Britain and the US in 1994, has about 90,000 subscribers.

Europe Online launched at Christmas with individual services for subscribers in France, Germany, Britain and Luxembourg, with regionally tailored content which restricts Web access to explicit sites.

It is unlikely you will find anything like the "Live Nude Videoconferencing" – recently being touted on various Internet newsgroups – by dialling up UK Online, which was launched in September last year and has specifically targeted family subscribers.

It claims that its research indicated that 64 per cent of UK families would prefer British-based content over a US-oriented service, and all of its subscribers are from the UK. A family membership costs £14.99 and provides four individual e-mail addresses and unlimited use of the service facilities.

Again, UK Online's research told it that 93 per cent of its adult users would prefer to have parental control over what children might have access to. It offers a commitment that the content it supplies will meet its "strict editorial criteria to ensure its suitability for a family audience," while its system of parental control allows parents to specify what content children have access to and also how much time they can spend online.

With content-providers considering their options between Web and partnership deals with proprietary services, the commercial online companies may have realised that their future is inextricably tied up with the free-access culture of the broader Internet.

But with estimates of the online industry's revenue pie usually including the word "billion", they trust the market will continue to grow for their value-added services in partnership with the varied, yet unpredictable, treasures of the Web.

'Virtual' assembly instructions: Web surfers can now access three-dimensional, animated assembly instructions for 'flat-pack' furniture. The images are created by the visual computing company, Silicon Graphics. DIY enthusiasts can examine and rotate components to rehearse complicated assembly work

■ Network security

Operating under a cloud of uncertainty

Companies face a complex web of technical, legal and moral questions

The IT security threat has long been depicted in terms of wild-eyed hackers hunched over terminals late into the night. But while there is real cause for concern about criminal activity over computer networks, large corporations are very worried about another threat to their use of electronic communications.

Meanwhile, government restrictions on the use of data encryption codes in various countries are limiting the ability of commercial organisations to protect themselves.

Cryptography is at the heart of this dilemma. Governments all over the world rely on specialist intelligence units to break down data transmissions from other nations and individuals while encrypting their own messages.

The US National Security Agency and the UK's Government Communications HQ are the best-known of these agencies.

The NSA is notorious for obsessive secrecy. Meanwhile, in the UK, the GCHQ has lifted its traditional reticence in recent years to offer advice to British companies concerned with data security.

Mr Roger James, chairman of Cheshire-based communications software specialist Boldon James, has worked with GCHQ to define data standards for UK government departments. Mr James plays down the cloak-and-dagger imagine of GCHQ, but instead he describes his contact with its staff as "horribly technical". He also portrays the Cheltenham code-breakers as "very down-to-earth people".

There are two ways of looking at security, he says – "one is the practical approach, which means accepting that perfect security is impossible to obtain. The other is the Ivory Tower approach, which involves dreaming of a world in which security is absolute. There are a lot of 'practicalists' in GCHQ".

Mr James, whose clients include the Britannia Building Society and the German Navy, is active in the European Electronic Messaging Association. He is concerned at the lack of a co-ordinated European policy on encryption. And he fears that effective security measures could become illegal with the advent of future legislation curbing the availability of encryption software.

It is illegal at the moment to use strong cryptography techniques in France without first depositing the key to unlocking your codes with the French government. UK companies developing sophisticated security programs find their software classified as munitions and subject to tight export restrictions, even within the EC.

In the US, the author of strong encryption program, called 'Pretty Good Privacy', found himself facing a Grand Jury and possible charges of exporting prohibited technology. The NSA has proposed that all personal computers made in the US contain the Clipper Chip. This security feature would give the NSA easy access to any data communications, however the user chose to encode it. The proposal is currently stalled, having met with ferocious opposition.

Both suppliers of information technology and industry at large need to clear a path through this international maze. The legal structure surrounding the use of encryption technology is of particular concern to anyone working in electronic commerce.

"The Clipper Chip debate raised a fundamental moral issue," says Mr James. "Software technology means that strong encryption, previously available only to the military, can now be obtained by the public. If governments then find messages hard to break, it leads immediately to a conflict of interest."

One company that has confronted this apparent conflict of interest between state and commerce, with its attendant uncertainty, is the Anglo-Dutch oil giant, Shell. Mr Nick Mansfield, a Shell technical consultant specialising in information security, says the company is enthusiastic about the potential for eliminating paperwork across its sprawling global operations – "we are committed to electronic trading," he says. "We have a vast electronic-mail network. But there is still a section of our business where we have to use paper".

Contract agreements are at issue here. Until security can be absolutely guaranteed, bilateral agreements must be seen to be tamper-proofed. Shell is about to deploy technology to secure personal computers and PC servers across the world. This e-mail security system will cost around £1m in software purchasing plus £100,000 a year to run. It will have 4,000 users.

Far from escalating costs, Mr Mansfield explains that expenses are falling as security improves. Shell used to run a secure telex network that cost £4m in technology and required £200,000 a year to support 120 sites. This was superseded by a secure fax network costing £1m in systems, plus £100,000 in annual maintenance for 200 sites. The latest system will expand secure messaging beyond the fax network's remit.

But setting up this security system involved Shell in a long and involved process. Its chosen security software is subject to close scrutiny by the UK authorities, who worked with Shell to customise the program before it could be released for use overseas.

While Mr Mansfield is pleased that Shell's security system is so strong, it required an export licence and he echoes the concerns of EEMA's Mr James – "it's a cart and horse situation. Until governments agree on policy and relax some restrictions, industry won't be encouraged to development extreme standards of encryption".

There needs to be a broad European debate on this issue. Until this complex web of technical, legal and moral questions are resolved, secure commercial data networks will be operating under a cloud of uncertainty.

Michael Dempsey

■ Case study: converging services

Host to the London Internet Exchange

When computers and communications are brought together in the same location, all sorts of synergies are created. Rod Newing reviews what happened in the London Telehouse

The London Telehouse was built in Docklands three years ago to provide a highly secure environment for city mainframe computers, as well as providing disaster recovery and business continuity services. This impressive building – within two miles of Canary Wharf – has been designed to provide the highest possible level of protection against flood, fire, bombs and sabotage.

Power and communications facilities are just as important as physical security and the London Telehouse has multiple back-up systems. There are two separate high voltage links to the National Grid, two generators and a battery room.

There are telephone links at each end of the building, feeding through separate lines to six BT exchanges and four Mercury ones. Each line is backed up by several other lines and there are duplicated deep fibre optic cable links to clients in the City of London. There is also a "teleport", equipped with microwave and satellite wireless data links.

Despite Telehouse having a target market of city institutions, one of the early tenants to move equipment into the building was Unipalm Pipex, Europe's largest Internet service provider. They established a point of presence, using a link to Telehouse America, a similar secure building, to offer Internet access to the US.

"As an Internet provider, you need to put servers and equipment as close to communications facilities as possible," says Keith Mitchell, Pipex International's head of engineering. "In the US we can put our equipment into telephone exchanges, but that solution is not available in the UK. Telehouse offered us the necessary communications links, together with a secure physical environment for the equipment."

As Internet usage exploded, Pipex was soon joined in the Telehouse by more international telecom carriers, as well as other Internet providers. It is here that Pipex locate their WorldServer, a powerful Sun server which is one of the largest Internet servers in Europe.

"In order to provide a resilient site for computers, you need first class communications links," explains Telehouse Director Kevin Still. "The Internet providers depend on international carriers and were attracted to Telehouse by the presence of BT, Mercury and Sprint. As the Internet use expanded, more carriers were attracted to the building because of the Internet providers. This created a virtuous circle of carriers and Internet providers attracting each other."

There are now 15 international carriers in Telehouse, including all five domestic carriers. So far, 17 Internet providers have become tenants, including all five "backbone" companies. Telehouse now carries 85 per cent of Internet traffic between Europe and the US.

"We are ready and willing for all traffic to come through here," says Mr Still. "The building design is ideal for this service. We want to locate all Internet providers and carriers in the same building to create an important gateway into Europe and the US. It will also provide a competitive emporium of communications services where they and our other tenants can also feed off each other."

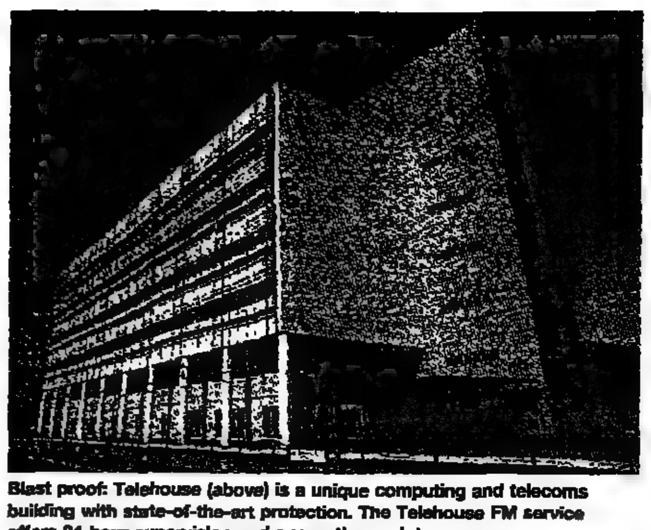
An interesting opportunity provided by the Telehouse was the creation of a UK interconnect point, the London Internet Exchange (Linx). It is a broadband fibre local area network between the 17 different Internet providers within the secure physical environment of the building, allowing then to share their capacity.

"This is a major service to the Internet user-community, but it is only possible because their servers and equipment are located in a common neutral environment where they are treated equally," says Mr Still. Although they are a shareholder in the building, BT are treated at arm's length by the building managers.

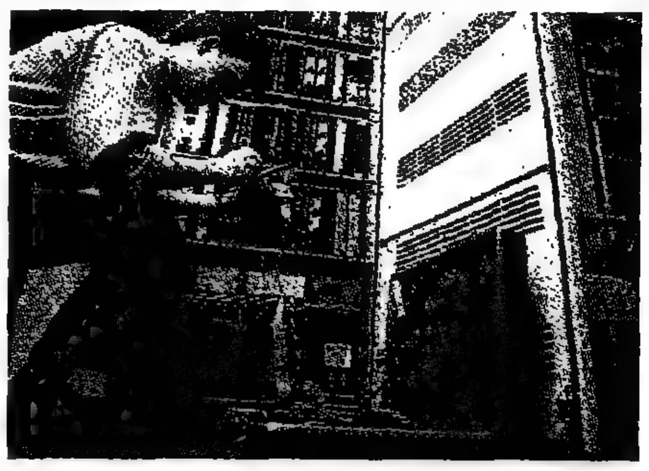
The presence of all these carriers and Internet providers brings the other tenants of Telehouse a big benefit: they have a wide choice of international point-to-point and Internet suppliers with whom they can connect. Most importantly, they can make their connections through a local cable in a protected duct within the building, rather than in the street where it is vulnerable to damage.

"Telehouse promotes competition by giving good connectivity between different computer networks," says Mr Mitchell. "Unfortunately, it's unique in Europe and we need more such facilities."

Bomb damage in the City of London: financial institutions are acutely aware of the need for secure IT back-up facilities *Picture: Colin Beere*



Blast proof: Telehouse (above) is a unique computing and telecoms building with state-of-the-art protection. The Telehouse FM service offers 24-hour supervision and supporting maintenance



■ Banking applications – By Alison Smith

Still a long way to go

Banks seem more interested in evolution than in revolutionary developments

With millions of customers who include some technophobes, and systems that they cannot afford to go wrong, it is scarcely surprising that many banks are not at the cutting edge of information technology – although the financial world has long been one of the largest investors in automation.

The banks recognise the transformation IT has already made, both in banks' internal processes and in how they provide services to customers. They also acknowledge that further developments will bring about even more significant changes.

It will mean both challenges and opportunities. So far as one financial technology expert is concerned, one important element is that the demand to provide services around the clock will put increasing pressure on some UK banks' main computer systems, requiring their upgrading.

"TSB already has a real-time system, but Barclays still has a batch processing system," he says. "Banks with batch processing which are offering 24-hour services and allowing customers to use them by personal computers and smart card technology, will have to rethink their systems."

Mr John Sturgeon, business development manager for customer banking at ICL Financial, sees a more fundamental issue facing the banks over the next few years. As the Internet, and other networks, become more accepted as ways of transacting business, then the question arises whether the parties involved need a bank to carry out the transaction.

"Transactions could go across the Internet from customer to supplier, with the bank just acting as custodian and not doing the transaction itself. The traditional role of banks could disappear."

He believes that the availability of hundreds of television channels within a few years could also pose a threat to the banks.

Using these TV channels should lower the costs of entry to the personal financial services market, making it easier for non-banking organisations to offer financial products, perhaps creaming off the extra higher-earning services without feeling obliged to offer the basic money transmission facilities provided by the high street banks.

For the main UK banks, however, the accent is much more strongly on the opportunities that technological developments can provide, both in their own internal processes and in terms of what they can offer customers.

While much restructuring of banking processes has already taken place, some changes are still in progress.

UK clearing banks, for example, are in the process of shifting to a new system in which the details of cheques can be read and transmitted electronically, and the cheques themselves do not have to be presented at the bank branch on which they are drawn. Most other European countries have already adopted this approach.

Mr David Guest, manager of electronic commerce at Midland Bank, believes that the widespread use of document image-processing could be the next important change for banks. "At the moment we're still shuffling immense amounts of paper. The cost of image processing is only now becoming affordable, but there is great potential for speeding up processes and access if every document is scanned on arrival in a branch or office," he says. "We could make fantastic savings."

Mr Gordon Pell, general manager of retail operations at the Lloyds TSB Group, says that the electronic transfer of information – "the electrification of the back office" – will contribute to the widely-expected shakeout in the banking sector, as thousands of low-skilled jobs disappear.

Mr Steven de Looze, a senior executive in new delivery channels at National Westminster Bank, believes that technological developments could transform the delivery of products and services.

Alongside the commonly-held view that increasing use of the telephone and the prospect of providing services through customers' televisions and personal computers, he sees a role for the banks in providing information services to business customers, perhaps especially in developing these for smaller businesses.

"I think there is a large market in providing or broking business-to-business services," he says. "There are already a number of service providers, but there is no reason why banks should not act between information providers and businesses."

The focus within the banks for changes in delivering services to customers is not so much on ground-breaking ideas, as on developments that allow services to be provided more cheaply or more accessibly. Despite the advice from some technology managers that IT developments will revolutionise the banking sector, banks themselves sound more interested in evolution.

"Although some things will happen very fast, in general, banks have to have a lot of trust that *when* they do things electronically, they do it *well*. That requirement will slow down the pace of change," says Mr Guest.

Big question: as the internet and other networks become more accepted as ways of transacting business, will the parties involved still need a bank to carry out the transaction?

Developments in home banking and multimedia in finance: see Page 10

■ Science Museum goes online

The 'virtual museum' becomes a reality

New London project shows how the Internet is helping to reshape the face of education and research

With more than 200,000 objects on display relating to science, technology and medicine, the Science Museum in London attracts more than 1.4m visitors a year. But now, with 500 Web pages set up on its Web Server, the museum has the potential to attract millions of Internet "browsers" to access its vast educational resources.

Net browsers around the world can call up information ranging from the history of flight to conferences on issues surrounding genetic screening. International users are now downloading 60,000 files a week.

The museum is really one of three, which together with the National Railway Museum in York and the Museum of Photography, Film and Television in Bradford, make up the National Museum of Science and Industry. Each venue is computer-linked via an open systems network, installed by Data General, the hardware company largely responsible for the Science Museum's developments in cyberspace.

Wide choice

Alistair McLaurin, the museum's IT manager, says more than 40,000 "virtual visitors" logged on to the museum's server in the early months of this year. A trip to the "virtual museum" takes visitors through a choice of galleries – one popular tour is called "Treasures of the Science Museum".

More than a third of the "virtual visitors" this year come from schools and educational centres. As more schools become connected, "the museum is faced with the challenging of expanding its traditional remit to a new and much wider community," says Mr McLaurin.

"The 'virtual museum' is just a part of what we will soon be calling 'virtual education,' which is also a challenge to the current educational curriculum," he adds.

In spite of the Internet links, Mr McLaurin is confident that the online services will not replace "real" visits to the museum.

"Researchers, schools, tourists and families will always want to experience the real thing," he says. "But a virtual museum does allow distant visitors from, say, Manchester or even Mexico, to benefit from the displays."

Within the London museum, 240 users can also surf the net and communicate via electronic mail. The aim is to increase these internal facilities to 400 Internet users this year. More than 300 groups visit the museum each day during term-time. Visitors can also take a "virtual side step" and visit galleries at other museums around the world.

"Projects such as the virtual museum are very much at the cutting edge of the information revolution," comments Mr Mike Maunder, marketing director of Data General. The Internet, he adds, is "helping to reshape the face of education and research".

The Science Museum's Web pages can be accessed on: http://www.nmsi.ac.uk/

Michael Wiltshire

The new and the old: at the Science Museum, Alistair McLaurin with a laptop computer, showing Babbage's Engine on the Internet – and in the background the original machine, invented by Charles Babbage (1792-1871). Babbage, called 'the parent of modern computing' was a self-taught professor of mathematics, who with a colleague, Ada Lovelace, designed the famous machine to help calculate vast numbers of logarithms.

■ Interview with Marco De Benedetti

Multimedia partnerships

Continued from Page 2:

£800m. But technology has a nasty habit of veering off in unexpected directions. De Benedetti's point about ATM is that it is merely an enabler, if a business concentrates too hard on the bits and bytes of one invention it might lose sight of the bigger picture.

De Benedetti cites IBM's purchase of software giant Lotus in order to gain the Notes groupware product. With the surge in Internet usage, many work groups claim you can get Notes facilities from joining the World Wide Web. In De Benedetti's view, that raises questions about the price IBM paid for Lotus – "the Internet arrives... and throws $6bn out of the window".

De Benedetti claims Telemedia will be nimble enough to survive in this bewildering and unpredictable world. "In our industry it's certainly been the case in the past that leaders in one generation didn't stay at the top," he says.

The challenge is to maintain the momentum of change, and he has no illusions about that being easy.

"To transform yourself is very hard. Olivetti was born 80 years ago as a typewriter company. Then it became an *electric* typewriter company... then it changed into a personal computer company. All of those moves were traumatic for the management."

Today, De Benedetti characterises Telemedia as the mechanism by which Olivetti will effect the next transformation.

If it boasts knowledge inherited from Olivetti, the company will also have sober ambitions dictated by De Benedetti.

Infostrada will develop the Italian phone market, but for moves outside of its native territory Telemedia is quick to recognise the resources of third parties.

"I don't believe in global operations without partnerships," he says. Hughes was chosen as one partner for its unquestioned knowledge of the satellite business. "It has a 70 per cent share of the world market."

He points out that once you are relying on satellites, markets are not denoted by political, economic or demographic boundaries. "Your market is determined purely by the footprint of that satellite's broadcast."

Joint ventures

He appears wary of setting too much store by any one management strategy. But Telemedia is an example of De Benedetti's belief in "very focused centres of competence". The proliferation of Telemedia joint ventures illustrates this belief: "It was a deliberate choice to go for separate organisations, in each case. That way you get the best from each partner."

Pressed on his own grasp of the intimidating and obscure technology that underpins Telemedia's efforts, De Benedetti displays a remarkable honesty: "I'm certainly not a technical person. Actually, I'm quite ignorant about that side of things.

"But I *do* understand where the world is going. In the future there will be information and telecoms companies, but the concept of computer companies will be a little bit alien".

This swift reversion to the broader view could have come from the lips of his father. Carlo De Benedetti never loses a chance to speak of Olivetti in terms of political and economic developments beyond the ken of IT specialists.

Marco De Benedetti, in fact, displays many of his father's characteristics. While aides look weary at the close of a long day's briefings, he is still restless and eager to press on with business.

Much has been made of his youth. But Marco De Benedetti's energies spring from a refusal to let any Telemedia affairs slip past him.

His father once made a celebrated attack on Italy's Fiat dynasty, the Agnellis, declaring: "You can't be an industrialist and a playboy. It's inconsistent."

Telemedia clearly takes its cue from an industrialist.

One of Marco De Benedetti's two brothers, Rodolpho, works in an Olivetti holding company.

The other brother, Eduardo, is a medical doctor.

Marco is open to critical feedback from the family member who has ventured beyond the IT sector: "Eduardo is a user of technology. He tells me it's still too complicated – and he's right. We in the IT industry talk about systems being user-friendly. But we are too close to the products. Really they are very far from being user-friendly."

Telemedia's assorted multimedia moves will sink or swim on public acceptance. De Benedetti knows that complacency is the high-technologist's worst enemy.

He refers to the thriving Internet company, Netscape, as typical of new companies that can emerge practically overnight to challenge old certainties.

"There are lots of challenges ahead," he says. "There's still a war to fight."

■ News in brief

Directory of Internet service providers across Europe

Users and potential users of the Internet may wish to explore a CyberRoad map before starting their information superhighway journey, *writes Marcia McLeod.*

Developed by the European Electronic Messaging Association (EEMA), the CyberRoad maps create a directory to Internet service providers.

EEMA aims to provide information on more than 290 Internet service companies throughout Europe, exploring relationships between providers and detailing speed of service.

The number of stops a message makes on each supplier's network, and the length of time it takes to transmit a message, are highlighted. Supplier relationships are important because they could affect the speed of transmission.

For example, if one service provider buys "backbone" space from a different provider, the message sent by the Internet-user may have to travel through two parts of the network, thus taking longer or costing more in the process.

Customers may be better off going direct to the primary service provider. The CyberRoad maps also indicate whether the service provider accepts commercial traffic, as some are designed solely for academic or other non-profit purposes, and what European language the service speaks.

☐ *The CyberMaps are free over the Net (http://www.marketplatz.ch/ Eurointernet/), or cost £150 for print versions; details via UK telephone: 01366 793028.*

Big increase in the use of Lotus Notes

The use of Lotus Notes, IBM's unique groupware technology, will grow by 217 per cent in 1996, resulting in it being installed on 20 per cent of corporate desktops, *writes Rod Newing.*

This is one of the findings from the fourth annual survey carried out by the Lotus Notes Users Europe, an independent user group.

The explosion in the use of Notes is partly caused by the reductions which IBM have allowed Lotus to make in the price of the Notes client. This has encouraged existing users to make Notes applications more widely available within their organisations.

IBM claim that the cuts have given market share without affecting profitability. This has resulted in the sale of more Notes client licences in the last six months than in the first six years.

The survey finds that the greatest threat to Notes is the Intranet, an internal World-Wide Web. However, Notes Release 4.0, launched in January 1995, provides full integration with the Internet and Lotus believe it will compete effectively with the Intranet by providing a fully integrated environment with stronger support for interactive applications.

Results from the survey were recently quoted by Ray Ozzie, the inventor of Lotus Notes, as "the most comprehensive and detailed analysis" of Notes' usage he has seen.

The figures for Lotus Notes users are:

November 1994	900,000
January 1995	1m
June 1995	2.2m
Sept 1995	3.3m
January 1996	4.5m
December 1996 (forecast)	7.6m

☐ *Contact: Lotus Notes Users Europe: tel. 44 (0)171 917 2805.*

Information on electronic commerce

A new World Wide Web site has been set up to offer information on all forms of electronic commerce – EDI (Electronic Data Interchange), electronic mail and trading over the Internet, *writes Marcia MacLeod.*

Called "Year-X", the service explains what electronic commerce is and how to implement it; there is news on products, services, standards and associations; plus case studies and views from the industry and users. It also maintains a directory of companies providing an electronic commerce product or service.

Visitors to Year-X may also "hot link" – transfer to another site – to the home page recently opened by the Electronic Commerce Association, formerly the EDI Association. This offers information on the ECA plus details of forthcoming electronic commerce conferences.

☐ *Year-X's Web address is http://www.year-x.co.uk; tel. enquiries: 01271 870008.*

Parents look for guidance

Despite worries over pornography and lack of parental control, 51 per cent of parents in the UK would like their child to have access to the the Internet, according to a new report from Compaq, the computer company.

More than two-thirds of parents (69 per cent) believed that a home computer would improve their children's education, but one in three were concerned about the Internet's "unsuitable material" available to children.

■ **Value added network services** – By Philip Manchester

Opportunities for innovators

The growing influence of theInternet is part of a deeper change in the Vans market

The inexorable rise of Internet communications is changing the face of value-added telecommunications. In the past, suppliers could add value to basic telecoms in a number of ways – electronic mail (e-mail), electronic data interchange (EDI), directory services and so on.

However, when a new breed of value-added vendors came along offering Internet access, the so-called value-added network services (Vans) market changed.

Internet-based communications services are eating into the traditional Vans suppliers' revenue base – leading them to diversify. The e-mail market is the first area to feel the effect.

"You can already see the influence of the Internet on e-mail services," says Mrs Jolanda Goverts, editor of the Ovum news service, *Vans Markets Europe*. "Gateway access to the network is expected to generate the major growth in the next few years and the Internet will account for 25 per cent of it. Between now and 2000, we estimate an annual growth rate of 90 per cent for e-mail services through Internet gateways."

But it is not only traditional e-mail services which are switching to Internet-based communications. Many kinds of transactions are being diverted from traditional communications services to the Internet. A recent report from Forrester Research expects Internet-based transactions to double by 1997. It says that in the next year, three-quarters of Fortune 1000 companies are expected to move from the current use of the World Wide Web (WWW) – as an extension of the marketing department – to using it for real business.

This assumes a significant rise in Internet "transactions" other than conventional e-mail messages. Chiefly, the increase will come from electronic "orders" for goods and services and electronic payment by credit card or "digital cash." But it is unlikely to have any impact on interbusiness electronic document interchange (EDI) – another key area for Vans suppliers.

At present, conventional Internet-based e-mail services are neither secure enough nor robust enough to carry this type of business transaction. This is reflected in Ovum's research: "There is no detectable influence on the EDI market because people don't see the Internet as being reliable enough yet. Businesses are sticking to X.400 connectivity because it is better technology. It gives message acknowledgements and so on," says Mrs Goverts.

The X.400 specification is an international standard for electronic mail which provides for secure and reliable transmissions of messages across a network. An X.400 gateway service gives businesses access to this as the foundation for secure business communications.

Gateway services are a traditional source of revenue for Vans suppliers. In the past, the bulk of the revenues have come from proprietary alternatives to X.400. But the balance is shifting. According to Ovum, revenues from X.400 gateway services in Europe are expected to overtake revenues from proprietary services by 1999.

X.400 is expected to grow at 67 per cent a year up to 2000, says Mrs Goverts: "Vans suppliers are moving to X.400. BT in the UK, for example, provides Internet services. But although it is not promoting it, it recommends X.400 for commerce. It is also worth noting that Microsoft is geared to Internet, but it also provides X.400."

Meet Email Emily: an online 'agony aunt' who provides a sympathetic ear for members of Online UK which offers a range of programmes including newswire, hobby clubs, health and fitness features, sports reports and horoscopes. Family membership costs £14.99 a month

The influence of the Internet is being felt in the world of EDI, however. Mrs Goverts notes that businesses in Finland use the Internet for EDI because "awareness is much higher". There is no evidence to suggest that other European countries will follow the model in Finland – but at least it suggests that it could be a possibility.

The growing influence of Internet is also a part of a deeper change in the Vans market. Deregulation and increased internationalisation of the telecoms market has made some market sectors unprofitable. Basic telecoms services, for example, are better provided by the large suppliers: "It is a defining moment for Vans suppliers. They can't compete on the basic network services – running networks is not where they can add value any more," says Mr Chris Gahan, a data solutions manager at BT.

"They have to move away from the plumbing and find ways to add value with things like project management and managing outside services like virtual private networks," he goes on.

Mr Clive Curtis, product manager at services supplier MFS Communications, agrees: "Our primary business is in supplying virtual private networks for business. Modern networking technology is complex and we have invested in the expertise to serve our customers. We see our potential in providing management services for networks – expanding outwards rather than upwards into the application-specific areas."

He goes on to say that MFS sees great potential in what he calls "total area networking":

"There is a gradual evolution towards total area nets especially now we have got rid of the bottlenecks in the wide area networks with new technologies like frame relay," he says.

There is no doubt that the new communications technologies and advent of the Internet have shaken up the Vans market. But equally, there are still plenty of opportunities for those suppliers prepared to innovate.

■ **Virtual private networks** – By Philip Manchester

US companies are leading the way

Changing work patterns are a big incentive for companies to install VPNs

The convergence of computers and telecommunications has opened the door to new ways of communicating. Traditionally, telephone systems are 'hard-wired'; the functions they perform are built into the hardware. But with computerisation, modern telephone systems are, increasingly, 'soft'. They can, for want of a better term, be 'intelligent'.

Modern features we take for granted – such as itemised billing and call-redirection – are possible because of the 'intelligence' of modern telecommunications.

Virtual Private Networks (VPN) are another example of the same phenomenon. Software technology allows telecom suppliers to provide individual companies with their own private network, using the standard public switched network. This means, for example, that an incoming telephone call can be re-routed to another employee of the same company, regardless of geographic location.

Although the concept of private networks has been around for some time, they are generally based on dedicated, leased lines. VPN looks the same as a dedicated network to users but it is based on conventional public networks.

"Companies have two options for enterprise networking. They can go for a managed service-based on a dedicated network or they can go for VPN," says Mr Jeff Ace, director of IBM Global Networks.

"VPN has all the attributes you need for an enterprise network – but it allows you to go your own way with familiar a network and get the economies of scale which come from using the public switched telephone system," adds Mr Ace.

Managed network services have, of course, been around since the early 1970s. They have given large companies the ability to view their telephone networks as single resource – both for voice and data traffic.

Since the mid-1980s, when Sprint and AT&T launched the first VPN services in the US, a growing number of corporations have opted for the VPN approach. The result is that the US is the most mature market for VPN services. According to a recent report from market researcher Ovum, the US market for VPN services in 1995 was $3.6bn.

Because of the maturity of the US market, only moderate growth is expected between now and 2005, when the market will be worth $5.5bn.

The picture is very different outside of the US. Ovum puts the market in Europe and Asia-Pacific at $10m last year, rising to $7.9bn by 2005. There are several reasons for this growth: telecom companies want to cut costs and one way of doing this is to move their large corporate customers from dedicated networks to the public switched network.

At the same time, the technology, which makes VPN viable, has improved. "We are investing heavily in innovations such as frame relay technology which gives much greater and more flexible bandwidth," says Mr Ace of IBM.

This technology not only speeds up traffic on a network, it also allows traffic – specifically voice and data – to be mixed.

"Companies are going to VPN because they are looking to consolidate or expand their networking to meet changed work patterns. VPN covers both voice and data," Mr Ace explains.

Changing work patterns are another significant incentive for moving to VPN. "Businesses are recognising that they must become more customer-oriented. So activities such as telemarketing and telesales are among the main change agents," says Mr Chris Gahan, data solutions manager at BT.

"In the 1980s, companies tended to rent private circuits. But now they are looking for different kinds of function from their networks and VPN offers a better option. Traditional telecommunications were inward-looking. Now it is important for companies to look outwards."

The type of network traffic that businesses need has changed, he adds. "The traditional operational systems that companies use are based on transaction-processing with predictable traffic levels. This suits the private circuit services. But companies today need more flexibility and a network to handle peaks and troughs. The private circuits just don't meet the need. VPN can share bandwidth and is better suited to the new environment where you need a blend of services."

VPN also offers other benefits: "The 'technology churn' is still with us and companies want to protect themselves from change. At the same time, new skills are needed – as with any fast-moving technology. VPN can insulate companies from the need to keep up with the changes," says Mr Ace of IBM.

At BT, Mr Gahan also points out that VPN "allows companies to scale their networking needs up and down more easily and they can derive cost-benefits" from sharing a large telecoms resource. In many ways, VPN is a natural progression for business telecoms. Provision of networking services – whether for voice, data or a combination of both – is a utility and, therefore, not part of 'core' business activities.

The nature of the global telecoms market means that prices will be competitive and it will make sense for many medium-to-large organisations to opt for VPN. For once, the interests of suppliers and customers are compatible.

■ **Searching the Net** – By Joia Shillingford

How the Internet boosts book sales

The slowest thing is the actual physical shipment of the books from source to customer

Forget thumbing through Yellow Pages to find *Fly Fishing* by its author, J R Hartley – a familiar, nostalgic theme in many television adverts for Yellow Pages in the UK. Today, the cool way to search for second-hand books is via the Internet.

No-one knows this better than Glyn Watson, whose bookfinding business has expanded since he went online a year ago. "The Internet is the friend of the printed word, not its death-knell," says Mr Watson.

His Shropshire-based business, Glyn's Booksearch, can only be reached by single-track road, yet he can search for out-of-print, second-hand and antiquarian books anywhere in the world.

In many ways he is a classic example of the new breed of Internet professional. "I sit here, like the spider in the middle of a web," says Mr Watson "finding books in North Carolina and having them shipped to Japan – all using electronic mail."

Sometimes Watson uses databases accessible via the Internet to search for books. Even when more traditional methods of book-searching are involved, electronic mail via the Internet (the global e-mail and information network) often plays a part.

"I may use an online database of over a million books located in the North West of America to find a book for a customer 20 miles from here," says Mr Watson. "Or I might use slower, though reliable, UK trade press advertising sources to find books for a customer in Australia.

"I collate a large and detailed list and e-mail it to her in seconds; so old and new mix seamlessly."

The Net helped Mr Watson find several volumes of British 19th century poetry, in sumptuous decorated bindings – for a UK customer. The volumes were scattered all over the US. Or he might buy books in the UK but send a quote by e-mail anywhere in the world.

The J R Hartley television advert: today, the Internet offers an alternative to the Yellow Pages for those searching for second-hand books

Mr Watson believes that those looking for out-of-print books now have a far greater chance of getting what they want simply because of the increasing number of Internet links among members of the second-hand book trade – with international frontiers being no object.

The slowest thing is the actual physical shipment of the books from source to customer. Even that can be overcome. Mr Watson recalls: "I had a call one afternoon from someone needing an obscure academic title within days.

"Minutes after he'd called – using online resources – I'd located one copy in a small Virginia bookstore. A phone call secured it and it was on its way by airmail – all within half an hour of the original request to me."

"With variations, that's not an exceptional story," adds Mr Watson. Credit and debit cards and electronic card readers simplify payment. The US is ahead in electronic bookselling, according to Mr Watson: "Many booksellers which carry extensive stock and are essentially retailers (not book searchers) are in places so remote, they make Shropshire look like Oxford Street."

Some of these dealers trade almost entirely online, venturing out to buy stock and to post the books sold. If they relied on retail trading, they would not exist.

"It's as easy for them to sell to me as to anyone else," says Mr Watson. "And it's as easy for me to buy from them as it is from someone down the road. Ultimately, this means that more people are getting more of the books they want, and that encourages further reading and book buying."

It can only be good news for J R Hartley and other, less mythical, writers. It is also good news for booksellers. "Every bookseller that I've spoken to who uses the technology reports increased sales," concludes Mr Watson.

☐ *For more information, see: http: //www.aladdin.co.uk/u/glynbook, or e-mail Internet: glynbook@aladdin.co.uk*

☐ *Second-hand books are also available from: the Internet Secondhand Bookshop on http: / /www.cityscape.co.uk/users/ds36/*

☐ *Kenny's Bookshop sells new, second-hand and antiquarian books of Irish interest: http: //www.iol.ie/kennys/*

☐ *Out-of-copyright books are available from Project Gutenberg on: http: //jg.cso.uiuc.edu/pg/lists/list.html*

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■ Video-on-demand – By Philip Manchester

More than 'Hollywood online'

The first lessons about 'Vod' services are being digested. Progress towards a world of interactive TV is under way

Video-on-demand (Vod) services are about instant access to the latest blockbuster cinema films through the telephone network. But although this is the first image to come to mind when Vod is mentioned, the service is about a great deal more than "Hollywood online".

Reports on Vod trials in Europe and the US emphasise access to films in order to draw attention to their experiments. But behind the special set-top computer which delivers Vod to the home TV lies a vast and growing infrastructure.

The experiment is as much about testing the technology which delivers the services as it is about finding out how people will use them.

First of all, simple Vod is not likely to be a big money spinner for service suppliers. After royalty payments and the current high cost of delivery – together with the need to keep prices competitive – Vod alone is not economically viable.

Video-on-demand, therefore, is only part of a range of what are being called interactive television services. *(see also Paul Taylor's report, below.)*

"You have to offer interaction with banking, shopping, games and information services, too," says Mr Andrew Creci, UK marketing director for Silicon Graphics, a leading manufacturer of video "server" computers. Trials all combine these services with Vod.

The Cambridge Interactive TV trial in the UK is an example. It has brought together a group of specialist companies to create the infrastructure.

ICL, the computer company, and Cambridge Cable, a local cable TV company, Acorn Computers and others are supplying the infrastructure components. As with other trials, the infrastructure to deliver services is complex and expensive.

Powerful video server computers are connected through a fibre optic cable network and advanced communications computers to the "set top" computers in the homes.

The trial is supported by a group of services suppliers such as the BBC; Anglia, the local commercial TV company; NatWest Bank and the Tesco supermarket chain. Between them they cover the complete range of interactive TV services.

Testing the technology and learning the lessons: BT's video-on-demand trial in Ipswich, using Sequent SE70 highway controllers

Lessons are being learned from this and the other trials. Mr John Burton, telecommunications marketing manager at Sequent, the specialist US computer manufacturer, , refers to advances in the infrastructure for delivering services, for example – "the vast majority of leading telecommunications companies throughout Europe and the rest of the world are engrossed in trials at the moment. We are involved in the administration systems of three of the major ones and are learning how to make a commercial service out of these technologies," says Mr Burton.

Sequent supplies what it calls "highway controllers" for interactive TV services. These systems handle the control and management of the service and work independently of the "video pump" – the computer which stores and delivers the moving pictures. Mr Burton says that this is proving to be a workable model for delivering high quality services.

"There are still some problems with the delivery technology but these are minor issues and it is moving forward quickly. The problems come when you scale up from the trial to a full-blown service.

"By separating the video pump from the interactive services we are able to scale the systems up to hundreds of thousands of users," he says.

Partnerships

Sequent is involved in three trials in partnership with the US software giant Oracle. In the UK, it is working with BT: in Germany with Deutsche Telecom; and in Italy, with Telecom Italia.

Mr Creci of Silicon Graphics also mentions the problems of scaling up trial systems:

"We are working on a trial with NTT in Japan with 400 people. But the plan is to connect tens of thousands and for large-scale deployment you have to take a different approach," he says.

Silicon Graphics chief executive Mr Ed McCracken recently criticised many trials for not paying attention to useability and scaleability. From its involvement with NTT and with Time Warner in the US, Silicon Graphics has learned that although the technology problems are complex, they can be solved. But it will be expensive:

A project by Video Graphics, one of the leading manufacturers of video 'server' computers. Trials indicate that although the technology problems are complex, they can be solved

"The work we are doing with Time Warner in Orlando is ten times too expensive, but we know we can make ten times the price in three years.

"Those companies that have not taken that kind of technology step and are trying to implement systems today that are reasonably cost-effective are irrelevant. They are missing the point," comments Mr McCracken.

Silicon Graphics says it has also learned another valuable lesson from the trials. The quality of the service must at least equal that of present TV and video distribution channels:

"Our view is that content is king. You must be able to deliver the best quality service, which means you need the bandwidth and expensive boxes.

"This is why it is expensive. But in four or five years' time, prices will come down and suppliers will have to rely on pushing high-quality services," notes Mr Creci.

The first lessons about Vod services are being digested by the various trial sponsors and progress towards a world of interactive TV is under way. It is still too soon to say, however, how the market will develop.

■ Development of interactive services

New signs of confidence

The digitisation of data is paving the way for a wide range of 'two-way' multimedia services, including interactive television, video-on-demand, home shopping and multimedia kiosks, writes Paul Taylor

Although the early take-up of interactive services in the US and elsewhere has failed to match some of the early over-optimistic predictions made at the start of the 1990s, most analysts agree that interactive media will eventually be a big and dynamic consumer market.

"The evolution of interactive media in the home is likely to take place slowly – over the next 10 to 15 years and beyond, but the impact on our lives is expected to be dramatic," note the authors of a report on interactive mass media, prepared recently by the London Business School.

Among the other conclusions, the LBS study suggests:

■ Information and entertainment, especially video games, are seen as the drivers of adoption for interactive media. Marketing communications (advertising) and transactions (home shopping and banking) will follow, and may eventually become the main commercial use of interactive mass media.

■ The use of interactive technology at work accelerates the adoption of new technology in the home.

■ Early use of interactive media in the home will mainly be through the PC, rather than television.

■ A switched broadband cable 'information superhighway' into individual homes may well not be cost-justified, except in the very long term as older wiring needs to be replaced.

Much of the interest in interactive services has focused on interactive television and video-on-demand, one of the services which interactive TV can deliver. Last year, Ovum, the UK-based technology consultancy, estimated that at least 50 trials had been completed or were under way.

Two main technologies are being employed in the trials with the choice largely reflecting the existing infrastructure and the background of the network operator. Where the network is largely fibre-optic cable or a mixture of fibre and coaxial cable, ATM (asynchronous transmission mode) has emerged as the favoured option. However, ADSL has proved to be a viable alternative, particularly for the local telephone companies where the infrastructure is mainly copper wire. In some cases ATM and ADSL have both been used.

In Europe, trials have included Online Media's ongoing Cambridge Interactive TV trial which is delivering a wide range of interactive services including video-on-demand, home banking, home shopping, local information, games, educational material and news.

In the US, a number of interactive TV services have moved from the trail stage into commercial deployment. Among these Time Warner has launched a service in Orlando, Florida, Southwestern Bell is deploying a large network in Texas and Bell Atlantic has launched a 384-channel service in Dover Township, New Jersey. The Bell Atlantic service, like several of the trials, uses BroadBand Technologies ATM-based FLX switched-digital video technology. The company claims the response to the service has been "extremely positive." Mr Salim Bhatia, BroadBand's chief executive, says: "We know that people want these services, and now we know that they are willing to pay for them."

But despite this upbeat outlook, some studies have suggested that consumers are unwilling to pay the subscriptions necessary to justify the hefty investment required to build an interactive network. In particular, some trial have suggested that consumers are only willing to pay a small premium over video-rental costs for video-on-demand.

Some analysts suggest that "near video-on-demand" – where films and other programmes are shown continuously on a large number of channels throughout the day so the consumer has to wait only a short time, perhaps 10 minutes, until their chosen programme starts – may provide a more viable lower-cost alternative.

However, observers such as Kris Nasta who is in charge of BroadBand's European Operations, argue that consumers have yet to see the full range and quality of services which will be available over ATM-based services. Neither is he worried by the prospect of new competition for interactive services from other delivery systems, including digital satellite the Internet.

Recently, a number of companies have announced plans to provide World Wide Web accessed television over the Internet, offering the prospect of widely-available cut-priced programming. Indeed, the recent rapid growth of online services and the World Wide Web, in particular, has encouraged many of interactive TV's early proponents to shift their focus to the growth of online services and the Internet.

Among the Internet "virtual shopping" arcades, established over the past year, is BarclaysSquare, launched by Barclays Bank and Jersey-based Supernet whose early 'tenants' include Sainsburys, ToysRus and Argos. Similar secure electronic shopping malls include the Internet Shopping Mall and CUC International.

Meanwhile, a growing number of merchants on both sides of the Atlantic, ranging from retailers to financial services firms, stockbrokers and employment agencies have set up their own interactive Web pages. Many sites began as experimental or pilot schemes, but this is changing fast as confidence grows in the security of the Internet for business, and a second generation of Web sites provide real opportunities for electronic commerce, interactive shopping and information services.

Multimedia in banking – By Marcia MacLeod

Positive feedback from trial

A growing number of banks is beginning to explore the possible benefits

Pioneering new technologies in banking and insurance: National Westminster is developing new multimedia services for customers

If a visit to the bank manager still seems more akin to a meeting with the devil than a supplier-client partnership, take a new look at the face of banking – for today's banking customers are as likely to find themselves talking to a multimedia touch-kiosk or a video screen as a real live person.

National Westminster was the first of the big clearers to take advantage of the retail opportunities being presented by new technology when it launched a videoconferencing customer interface in July 1994.

"We recognised we had a problem ini providing adequate service at acceptable cost," explains Martin Reynell, project director of the Network Strategy and Development Venture Branch.

"Customers wanted face-to-face contact with people who could deal with their enquiries, but the bank wanted to keep costs down by not providing experts on every area the bank deals with in every branch."

A six-month trial project, Remote Access to Expertise, went live in 10 branches in the Birmingham-Bedford-Milton Keynes area to enable customers to use the videoconferencing system to obtain information on the NatWest Home Protector package of building and home contents insurance.

Once shown how to use the system, customers called up NatWest Insurance Services in Bristol to connect to one of eight trained experts. A corner of the computer screen pictured the NatWest employee, with the rest of the screen displaying information on insurance, such as cover and premium. Details keyed in in Bristol – type of insurance, sum insured, etc – were supplied by the customer using the videoconferencing system.

Any questions or problems could be dealt with immediately, rather than through referral to a third person. Once the customer finished talking to the expert, a quotation, application form and other documents could be printed out at the customer's branch.

Positive feedback led NatWest to launch further videoconferencing projects. A foreign advice link was opened between a Southampton branch and an international banking centre in the town in February 1995, providing information on such subjects as paying money abroad and documentary credits. The Wirral went live last May with a general customer advice service.

A tax advice service linking branches in Worthing and Canterbury to a Brighton tax office helped customers, especially senior citizens, to complete last year's tax returns.

The Home Protector and foreign advice services have been discontinued, but NatWest is considering installing multimedia touch kiosks linked to videoconferencing in some branches.

Rather than speaking to an expert throughout a "meeting", customers could obtain a variety of information, including a quotation, say, on home insurance, through the touch screens; the videoconferencing could be used to call up an expert to answer any questions the system could not answer.

This is an approach also being taken by Barclays. Kiosks offering product information were opened in eight branches from Newcastle to Brighton early last year. "Feedback from staff and customers has been good," comments Anwer Shah, head of Barclays Multimedia.

"Customers are increasingly accepting the use of this technology, helped by the growth of multimedia PCs in the home."

Further projects include the provision of six kiosks for Camden Motors, a Barclays subsidiary, offering details – including pictures – of new and used cars and ancillary services, such as insurance and finance.

Three sites in Slough and three in Nottingham are split between Camden dealerships and shopping malls.

On January 8, Barclays launched "Barclayzone" in three branches – Fenchurch Street, Crawley and Maidstone – to offer details on investment and savings products. Customers use touch kiosks to obtain information, including a real-time share price or a stock opinion.

Customers who wish to transact a deal can then make a live video link to Barclays Stockbrokers in Glasgow to complete the transaction; those who do not have an account can open one over the video link. A number of new accounts were opened in the first 10 days of the system's operation.

Other banks are beginning to explore multimedia technology, too. Last October, Lloyds, for example, launched two LloydsPoint kiosks at the University of Sussex and Derby University to provide students with information on products and a telephone banking service for use when a branch is not available.

The Sussex LloydsPoint is located next to a cash point and is open 24 hours; the Derby kiosk is sited inside the Student Union, which is open from 8am to midnight. Each has a video link open from 8am – 10pm to connect to Lloyds' telephone banking service.

Students are using the kiosk to obtain information about student packages, plastic cards, travel services and other products. They use the video link to check balances, transfer money between accounts, and find out why the cash machine will not give them any money.

Some things, at least, never change.

Broadcasting and cable – By Raymond Snoddy

Saturation point looms

Special information channels or printed television programme guides will help alleviate the dangers of something akin to entertainment overload

The increasing abundance of new media and information provided by the emerging digital technologies is causing fresh kinds of problems, according to a research report by SRI International, the former Stanford Research.

In its latest study of the new media world, SRI warns that television is going the way of business computing, which has already seen a shift from the days when data was a precious resource to the current "information overload".

In future, viewers faced with hundreds of television channels are going to need reliable "context providers" to help them make sense of the vast number of options. Special information channels or printed television guides will help alleviate the dangers of something akin to entertainment overload. But SRI believes two kinds of participants will be specially favoured in the new world – those who can develop and extend strong existing brands already known to viewers and those who are first to enter new niche sections of the market.

"New-media visionaries often proclaim that old-media entities will quickly become dinosaurs. The reality is that existing brands will be key vehicles for new-media success," SRI believes.

Existing broadcasters can use their established name to launch new channels. In the US, the sports channel ESPN has launched ESPN 2; while, in the UK, one of the most famous names in British commercial television announced in December it would launch a raft of new channels devoted to particular topics each devoted to subjects such as motoring, health or cooking.

SRI also argues that being first in a new niche is absolutely vital even if that market is not popular at the moment. In the US, the Golf Channel, a cable television channel, is unlikely to attract imitators. The small, enthusiastic audience would simply fragment.

In the UK, Granada, in moving into what is the television equivalent of the glossy magazine for the first time, is putting down a marker for the future. Once Granada's television motoring channel is established, it will be very difficult for anyone else to challenge.

Such strategic competitive considerations are coming to the fore as leading international corporations plan first the 150-channel world and later, probably before the end of the decade, even 500-channel systems.

Already, billions of pounds are being invested on digital satellite projects – not just in the US or Europe but in Africa, in competing projects in South America, in the Middle East and in Asia.

In the UK, British Sky Broadcasting, the satellite company controlled by Mr Rupert Murdoch, is now capitalised at more than £6.7bn. Yet although detailed planning has been carried out the decision to launch a 120-channel system has not yet been taken and could be delayed into 1998 because subscriber numbers are still growing and have passed 5m, including cable-linked homes in the Irish Republic.

Even in the UK, new channels are being created all the time. Last autumn, BSkyB added no less than seven new programme services including the Playboy Channel, the Sci-Fi Channel and the Disney Channel.

Mr Sam Chisholm, the BSkyB chief executive, believes that the best way to keep the number of subscribers rising is to continue to add new programme services.

Cable is making its own contribution to programme diversity by seeking out its own exclusive offering to try to differentiate itself from satellite. Channel One, owned by Associated Newspapers, is offering 24-hours-a-day local television news in London and recently spread to cable networks in Bristol.

Cable laying in the UK: intense research programmes in interactive services are now under way by the leading cable companies

The Mirror Group is offering Live TV, a round-the-clock entertainment channel carried on cable networks in London and Birmingham which will also expand to Scotland. Its output has been galvanised by Mr Kelvin Mackenzie, the former editor of The Sun, who has introduced Topless Darts, the Canary Wharf soap opera with the guarantee that "You're never more than five minutes away from a snog" and a "News Bunny" which adds a little extra something to news bulletins.

The process never ends which means that SRI's concern about a scarcity of context and an inability of viewers to cope with the diversity may not be very far off in Europe. This year, two new, competing, 24-hours-a-day television weather channels will be launched, and there are plans for a new channel televising the European Parliament plus lots of channels created out of the libraries of the existing broadcasters.

For good measure, the UK and Sweden have both announced plans to launch digital terrestrial television – an additional 20 channels or so broadcast from existing land-based transmitters to conventional set-top aerials, although a digital decoder box will be needed by viewers.

At the moment BT is also conducting commercial trials on the possibility of providing digital information and entertainment-on-demand down existing telephones.

For some, creating two-way interactive communication systems is the main goal. Telephones clearly do that although capacity is at present limited. Cable, particularly fibre optic cable, provides virtually unlimited carrying capacity although cost is still a factor.

The three largest cable companies in the UK – TeleWest, Nynex and Bell Cablemedia – have set up a research programme to design interactive services including providing easy access to the Internet.

Some – and they are usually satellite providers and operators – argue that land-based super-electronic highways are expensive and inflexible. Satellite can provide the most cost-effective delivery of data and pictures and two-way communication is possible, too, via simple modems in the black box decoders connected to the telephone network.

All of which suggests that the new age of information and entertainment is likely to be supplied by a diversity of highways.

Home banking – By Alison Smith

Consumer interest is rising

Almost one in four people think they will be using home banking within two to five years

Neither bankers nor technology experts doubt that within a few years the systems will be in place to allow just about all personal customers to run their current accounts and buy complex financial products from the comfort of their own sitting rooms.

What is more open to question is how swiftly that potential will be realised.

A survey carried out last autumn by Mori for ICL Financial Services suggests that readiness to consider using home banking is rising sharply.

In all, 45 per cent of British adults would use a home banking service available through a television or PC: when a similar question (referring only to services through the television) was asked the previous year, just one-fifth of those questioned were interested.

Almost one in four people think they will be using home banking within two to five years. Paying bills, checking balances, ordering cheque books and money transfers are likely to be common transactions, while there is less enthusiasm for using it for transactions such as opening a current account, arranging loans and buying mortgages.

Mr Anwar Shah, head of multimedia at Barclays, believes that in just a few years customers will want to buy for themselves through the television some "commodity-type" services such as ordering foreign currency and buying home or motor insurance.

"We've seen a sea-change in our customers' attitudes to technology over the last 18-24 months.

"There are now a lot of people with multimedia PCs at home, and some companies are now looking at getting internet access by television, which would broaden the market further."

Mr John Sturgeon, business development manager for customer banking at ICL, says that the UK is more advanced in using technology for home banking than is continental Europe, although it is a couple of years behind North America.

While the proportion of US customers banking by PC is still in fractions of 1 per cent, the American Banking Association expects online banking to be offered by more than 40 per cent of banks with assets of more than $1bn by 1997, compared to the 11 per cent who were offering it last year.

In the US, one of the most popular forms of computer banking is through the Quicken Financial Network, which was launched last autumn by Intuit, the leading maker of personal finance software.

The company plans to launch full banking over the Internet during the second half of this year, giving banks which sign up the choice of how to brand, to price and to market the service.

Although such initiatives are likely to accelerate the pace of change, it is too soon to suggest that the growth of home banking means saying farewell to the branch networks of the high street banks in the US or the UK.

Mr Steven de Looze, a senior executive in delivery channels at National Westminster Bank, Britain's biggest bank, believes the shift away from branch banking will continue, but adds: "We are not talking about the complete demise of branch network.

"We are social creatures, and there is no way will we do all our banking and working over the television. We will still need face-to-face contact for some products and services."

Several banks have yet to be convinced that substantial investment in developing a complete range of online banking services is worthwhile. Mr Gordon Pell, general manager of retail operations at the Lloyds TSB Group, says: "All our planning assumes that there will be no charges on the mass market current account for the foreseeable future, because no one dare to do it.

"If that is the case, there is no great advantage, because the service is not cheap and there are only a small number of people whose financial lives are complicated enough to need it."

Agreement about the role of technology in selling more complicated financial products to the mass market at home is more widespread. It is seen as an aid to the interview with a sales agent in the customer's home, instead of a replacement for it.

"Customers welcome the opportunity to do 'what if' calculations on, for example, mortgages in the absence of a sales person," says Mr Shah.

Many of the UK's large life assurance groups have already found that giving computers to their sales agents assists them in the sales process by enabling them to produce in the customer's home, during the sales process, quick and accurate details of what particular policies would produce for different individuals.

For the UK's retail financial services sector, hit by low levels of customer confidence in the quality of advice being given, the use of computers by sales agents in millions of customers' homes has an added advantage – although not one that the organisations are so keen to shout about. It can be a further check in ensuring that sales agents give advice in accordance with regulators' requirements. As one banker said: "It's a way of making the sales force compliant."

■ Network-centric computing – By Tom Foremski

An under-pinning for business

US company 3Com believes it can transfer some of the benefits of using networks to the small office and even the home

Wherever users need to gain access to information and to contact colleagues in order to get their work done – whether they work in offices or at home – network-centric computing has come to the fore.

At its extreme, network-centric computing is leading to the development of cheap computing devices that are designed to connect to the Internet and have no local data storage.

The idea of a standalone computer is also beginning to disappear in the small office and home environment. This is a trend that networking company 3Com, among others, recognises and is addressing with the recent launch of its low cost Office Connect hub product.

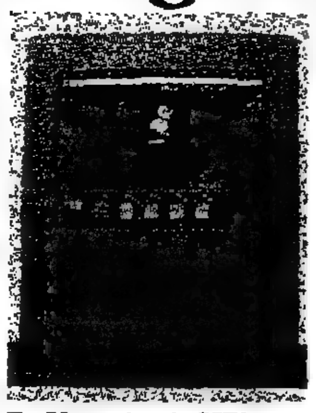
The original purpose of networks was to share office printers and occasionally transfer files between workers, but they are now a key element in the way businesses conduct their operations. Networks have become the foundation for client-server computing; for desktop videoconferencing; for pulling together the efforts of groups of workers scattered around the globe through products such as Lotus Notes; and they offer the means for collecting and distributing knowledge within an organisation.

As staff find themselves working from home and from remote locations, they want the same network access they are used to in the office.

"A lot more people are working from home, whether it is telecommuting or simply putting in an extra few hours when they get home. And they want quick access to the company network. The trouble is that 28.8 modems are too slow, they take too long to connect," says Ken Baynton, managing director of BtN Ltd, a company specialising in linking networks.

ISDN lines offer a better solution. "With ISDN, it takes just a second or two to make the connection and it is much faster than modems," says Mr Baynton. He points out that although ISDN provides quick network access, there is a perception that it is still too expensive – even though users typically pay only for the time accessing the network, unlike with modems where the telephone line is open for as long as the user is logged on.

The US company 3Com believes it can transfer some of the benefits of using networks to the small office and even the home: "It has always been expensive to network a small office. Some companies have found that if they have a small office, it is cheaper to connect users to the central office rather than install a local area network. We have developed a new hub product that makes it much easier and cheaper to connect small groups of people," says Bob Cushing, European marketing director at 3Com.


The PC turns into the PCTV – see also report on page 15

3Com's Office Connect product handles the wiring connections between PC users and office peripherals such as faxes and printers, and outside communications. The device has been designed to be simple to use and install. 3Com believes that there is a large market in networking small offices, and as homes add more PCs, there is a vast potential market in networking home computers.

However, unlike the larger and complicated corporate networks, the key to networking the small office and home is to keep things as simple as possible.

"The idea we are working towards is that the network gives people access to what they want, whether it is the Internet or the company network. We are in the business of providing the plumbing, making sure that when the computer user turns the tap, they get what they want," Mr Cushing adds. "It is important that the network access be as transparent as possible."

With Office Connect, 3Com carefully hid the complexity of the system, allowing customers to simply plug it into a wall socket and have an "instant" network. Other companies, such as Compaq Computer and Novell, are also targeting the small office and home market. Compaq is planning a series of low-priced networking products that can link home PCs and other home-based systems such as lighting, heating and security systems.

Novell, with its Nest technology, aims to extend its Netware networking system to controlling home-based electronics systems and even the electronic systems within cars. Nest relies on embedding special chips into a wide range of electronic devices and controlling their operation through standard power lines.

At IBM, the idea of networking has been built into everything the computer giant does. "We have a networking division, but every division of IBM considers networking, and the demands of networking, into their product plans," says Kevin Bishop, European and Middle East marketing manager at IBM Networking Products.

Mr Bishop points out that different types of networks are good for different tasks. For example, the Internet offers global access to a wide variety of information and communications but it is not suitable for networking applications that demand a fast response. IBM is trying to make sure that different types of networks can still communicate with each other.

■ Cable data communications – By Geoffrey Wheelwright

Faster access to online services

New facility offers 'multimedia the way it's meant to be – immediate, easy and fun'

The merging of telecommunications and cable television interests is spawning not only increased competition in many businesses, but also helping to create new enterprises and services.

One of these is the provision of telephony-style services using the cable television infrastructure, commonly dubbed "cable telephony". Not only are cable TV companies flocking to the business of providing traditional voice communications using their infrastructure, but many are making a big push for access to the worldwide Internet computer network (and its popular World Wide Web service),using high-speed cable TV lines.

In Canada, for example, the domestic cable television giant Rogers Cablesystems is testing a new service it calls Rogers Wave for Home. The service, announced in Newmarket, Ontario, last November, claims to offer "the fastest, most powerful access to a suite of online content, including the Internet".

For C$39.95 a month, consumers in this trial area use their PC and a cable connection to gain very high-speed access to the Internet and the World Wide Web.

"We've integrated breakthrough technology with Rogers' newly-upgraded two-way, fibre-coaxial broadband cable network to develop Rogers Wave," explains Colin D. Watson, president of Rogers Cablesystems.

"The service works at breakneck speed. A video clip that would normally take many minutes to download with a common telephone modem, takes only seconds with Rogers Wave," he says. "Now people can enjoy multimedia the way it's meant to be – immediate, easy and fun."

The service uses a 500,000 bits per second "cable modem", a specially-designed modem engineered for use with cable television networks, which is almost 20 times faster than the standard 28,800 bits per second telephone modem. Rogers also points out that with a cable modem, there is no "busy" signal, no dial-up – and no worry about tying-up the phone line when you are surfing in cyberspace.

The speed advantages are not universal, however. The performance of Rogers cable modems is dependent on how information providers configure their World Wide Web sites. For this reason, the company has a program to encourage them to take advantage of the technology.

"Through its Rogers Wave Greenhouse Program, the company is encouraging the development of new content that takes advantage of the large bandwidth Rogers Wave offers," says Watson. "For instance, Lifeline, Toronto Life magazine's online publication, as well as many other organi

Continued on next page

■ Digital broadcasting

The key challenge is price

The cost of digital television sets will come down in price as new chips are developed

Digital broadcasting is beginning to make a big impact on the production and distribution of television programmes but its journey into the home will take several years, following the development of cheaper digital TVs and digital TV decoding boxes.

Digital broadcasting technology involves the production and distribution of video images in a digital rather than analog form. The advantage of the digital format is that the quality of the original work is preserved throughout the production and distribution process. With normal analog video, there is a certain amount of picture degradation that occurs at every step of the distribution chain.

In the US, digital TV broadcasts are available through services such as DirectTV's digital satellite transmissions. But the future of digital broadcasts is closely linked to the future of interactive TV and high definition TV (HDTV).

The US Federal Communications Commission has approved a digital HDTV standard proposed by an alliance of leading electronics companies but there are still some details to be determined such as how to handle the transition from analog to digital TVs. With more than 300m analogue TV sets in use in the US, the FCC wants broadcasters to offer both analog and digital transmissions while the transition to full digital broadcasts takes place.

Comparisons

Although the technology for receiving digital broadcasts is available, the key challenge is price.

"The biggest issue is not one of distribution or government regulations, it's at the end user – providing the means to view digital broadcasts," says Reza Jafari, vice-president of the entertainment and broadcasting division of Electronic Data Systems (EDS). "I can produce and distribute content digitally, but there is virtually no audience. The cost of digital TV reception has to come down in price."

Consumers would have to pay as much as $6,000 for a digital TV or $500 for a digital radio. These costs are far too high compared with analogue TVs that can cost as little as $200. "These are tough economics to beat," points out Mr Jafari.

The cost of digital TVs will come down in price as new chips are developed and as the manufacturing economies of scale begin to take effect. But there is an additional problem in offering digital TV services that consumers want.

Clearer pictures are not enough to persuade consumers to pay more for digital TV broadcasts. The goal is to be able to offer consumers a wide range of services. These could include custom TV programming, interactive TV, and increased choices of TV channels and programmes.

There have been several US pilot projects testing various interactive TV services, conducted by leading TV cable and communications companies, but the tests have so far proved disappointing. Consumers taking part in the trials gave a mixed reception to the services offered and many said that they would not pay much more than they currently spent on cable TV and video rentals.

"The problem with many of these trials is that they were too small, so that even if they were successful, it would be difficult to extrapolate those results to the general population," says Mr Jafari. "The trouble is that no one really knows what types of digital TV services consumers want."

There is also uncertainty over what the best transmission medium will be to deliver digital broadcasts. Fibre optic lines to homes would be the best solution but the cost of laying the lines is very high. Existing coaxial cable-based cable TV lines offer a cheaper solution but presents some big technical challenges. Wireless broadcasting is a cheaper solution but, again, the challenge will be to customise services to the viewer.

The huge rise in the use of the Internet brings a further option. Although the bandwidth of the Internet is very small, over the next 10 years it will grow to accommodate large files, such as digital TV broadcasts, turning it into a viable distribution channel for digital broadcasts.

While the industry tries to solve the problem of digital broadcast reception, the use of digital production and distribution promises to cut costs and improve the production process. EDS is among several companies that offer hardware and software products for the production and management of digital video content which is then converted to analogue form for broadcast.

"It is often very difficult to find video clips and it can often be quicker to send out a TV crew to re-interview a person, rather than search a library for the right clip. With digital content, it is much easier and quicker to find the right clip," says Mr Jafari.

Producers can also resell parts of their content to other producers, which will help bring down the overall costs of producing digital video content.

Tom Foremski

■ Electronic publishing

Challenge of the new systems

The worldwide publishing industry is now at the centre of a digital revolution, writes Paul Taylor

New delivery mechanisms in electronic publishing – such as CD-Roms, online services and the Internet – represent both a challenge and an opportunity for traditional publishers.

Today, many encyclopedias and other reference works are available in CD-Rom format or online, academic studies and research papers are often published on the Internet before they find their way into print and at last count at least 500 newspapers around the globe had established an Internet or online presence.

With about 50m CD-Rom drives installed worldwide by the end of last year – a figure projected to rise to more than 400m by the end of the decade – CD-Rom publishing is now a well established and profitable business model for both traditional publishers and database vendors.

CD-Rom publishers include print publishers of reference materials who have diversified such as Reed which already publishes back copies of New Scientist on CD-Rom and other publishers such as Spain's El Periodico newspaper group which produce CD-Roms containing news and information for local school use. Others which have embraced the CD-Rom publishing market enthusiastically include consumer publishers such as Dorling Kindersley.

For example, in the wake of Microsoft's success with its interactive Encarta multimedia encyclopedia, most contemporary reference works – and many older publications including the complete works of William Shakespeare – are now available in CD-Rom format, fully exploiting the large 600Mb capacity of the medium.

Other advantages include *the powerful cross-referencing* and search tools that can be used and the ability to incorporate music, sound and video along with text and graphics.

One of the problems of publishing contemporary reference works on CD-Rom is that, like their hard-bound counterparts, they date quickly. One possible solution is to build a "multiple media" product which links standalone software with the Internet or an online service enabling the importation of up-to-date information.

Dorling Kindersley is among those publishers experimenting with this approach and is currently working on ways of integrating Internet functionality into its CD-Rom's content and access to online "clubs" or bulletin boards. "We believe that 'hybrid media' and 'media packages' or 'multiple media' have a bright future," says Andrea Kirkby of Daiwa's Institute of Research.

Meanwhile, newspaper publishers are also beginning to face up to the implications of the new digital media world. Changing social habits and emerging new technologies mean that newspaper readership has been in decline for a number of years in the west – the total newspaper circulation is declining by between one and two per cent a year in Britain. Younger readers in particular seem to be turning to new media for their information and entertainment. As a result, the newspaper industry has been investing heavily in media such as television and multimedia such as CD-Roms and Internet publishing. A year ago, about 60 US newspapers had some form of electronic edition but Steve Outing, new media consultant and author of the Online Newspaper Report for Jupiter Communications, estimates that there could be as many as 2,000 newspaper products online within the next 18 months.

Electronic publishing options for newspapers *(see report, right, by Stephen McGookin)*, include the Internet, using a World Wide Web site, or a partnership with one of the large online service providers.

Knight-Ridder's San Jose Mercury News was among the pioneers in electronic newspapers with its Mercury Center web site whose content was designed to complement rather than substitute for its paper-based edition – hedging against the risk of cannibalising their paper readership.

But despite the Mercury Center's success, a single blueprint for electronic newspaper publishing seems unlikely. *Many other* newspapers and magazines have chosen to publish the contents of their existing paper edition either partially or in its entirety.

Similarly, there is a lively debate over whether electronic newspapers should attempt to mimic the broadcast quality and "browsibility" of their paper-based counterparts, or deliver a more targeted or *personalised version of* the news. The second approach has been championed by Nicholas Negroponte, director of the Media Lab at the Massachusetts Institute of Technology, who supports the concept of the 'Daily Me' where the reader pre-selects individual areas of interest to make up the content of their own personalised electronic "newspaper".

Meanwhile other publishers have been experimenting with different delivery systems although Knight-Ridder's so-called Tablet – or portable flat panel display concept – was abandoned last year. However, it is still early days for electronic publishers, most of whom have yet to work out what content their audiences want to consume electronically, what form of advertising content is appropriate to the new medium and how much consumers will be willing to pay.

What most analysis do agree upon, however, is that the new media is likely to complement rather than replace print, even though electronic publishing looks set to increase its share of the market over time. "Digitisation of content will not only allow enhanced interactivity, but will allow content to be shared between media," says Daiwa's Kirkby.

■ Electronic newspapers – By Stephen McGookin

Publishers explore fresh online opportunities

About 800 newspapers are available online and more are being developed

When San Francisco's two leading daily papers, the *Examiner* and the *Chronicle* were shut down by strike action in 1994, their electronic offspring rapidly appeared on the Internet.

The following year, when the Detroit *Free Press* was off the streets, an online version of the paper was already available through a commercial service.

The incredible growth in the number of home-based personal computers over the past decade and the increasing *sophistication* of online services and the Net has led to newspaper companies exploring more seriously – and not just as a defensive strategy – the idea of electronic publishing.

The result is that there are now about 800 newspapers available online, with more in various stages of development.

Steve Outing, new media consultant and author of the Online Newspaper Report for Jupiter Communications, has guessed that there could be as many as 2,000 newspaper products online within the next 18 months.

One point that Outing emphasises is that the landscape in this sector changes extremely rapidly, something that is apparent from the frequent additions to both Outing's site through Editor & Publisher magazine *(www.mediainfo.com/edpub/e-papers.home-page.html)* and Eric Meyer's Newslink *(www.newslink.org)*; which are collated listings and links to newspaper and magazine products around the world.

Over the past two decades, the idea of newspapers delivering their information products to the reader electronically rather than on paper has been frequently explored in one form or another – whether that be through a conventional screen-based model or by a more fanciful route such as Virtual Reality glasses.

Pioneering research at the *Media Lab at the Massachusetts* Institute of Technology, under Nicholas Negroponte, its director, has helped push the debate within the industry, envisioning such developments as the "Daily Me": where the reader specifies individual areas of interest that make up the content of his or her "newspaper". *(See also the interview with Nicholas Negroponte on page two of this IT Review)*

Staff in the electronic publishing division at the Financial Times check the new London shareprice service on the Internet. The address is: http://www.FT.com

The so-called Tablet – or portable flat panel – concept developed by Knight-Ridder's Roger Fidler was an attempt to marry reader-driven choice in content with greater reader freedom through a portable delivery system.

It was abandoned last year by Knight-Ridder although Fidler continues to develop the Tablet in his research at the University of Colorado.

Database products

Commercial database products such as Lexis-Nexis, *Dialog or the FT's own Profile* service, provide searchable full-text versions of newspapers, but again, these are intended for the non-home user in a business environment, as their premium pricing attests.

Web-based novelties such as Dave Maher and Jeff Boulter's Crayon – Create Your Own Newspaper *(http://crayon.net)* – allows the user to choose from a menu of categorised sources, then to compile the material into a menu of stories.

Newspapers which decided to put themselves online basically had two options: they could publish on the Internet, or they could enter into a partnership arrangement with one of the large commercial online services such as America Online, Prodigy, or CompuServe. They could, of course, do both, and many did.

Taking advantage of its high-tech reader profile, Knight-Ridder's San Jose *Mercury News* was among the pioneers in electronic newspapers. Its Mercury Center web site *(www.sjmercury.com)* was an example of how to produce lively, interesting content designed to attract the crucial regular readers who would provide the high number of "hits" advertisers were looking for. Not surprisingly, it soon moved from a free service to a subscription base.

The new medium also allowed publishers of hard-copy titles to extend their branding by producing parallel *products which take on a life* of their own – and not simply "shovelware" editions containing the same, or less, content than the paper product.

One of the best such examples is HotWired *(www.hotwired.com)*, the Net version of Wired magazine. More recently, The Guardian newspaper in the UK *(http://go2.guardian.co.uk)* has developed a magazine-style web format which complements, rather than replaces, the hard copy product.

The most successful online newspaper in the UK has been the Electronic Telegraph *(www.telegraph.co.uk)* which since its launch in November 1994 has built a considerable virtual readership, including a good many British expatriates.

It recently introduced an online version of the popular Fantasy Football game – an example of how added value content can expand the paper's audience away from that traditionally associated with the paper product.

Contestants pay a £10 ($15) fee to take part, having first registered with the Electronic Telegraph access system and provided useful demographic information for the database marketing folks. According to Pippa Littler of the Telegraph, the paper has been "overwhelmed" by the response to the new online game.

Like all publishing ventures, the more you know your audience, the greater your chance of success.

It seems likely, therefore, that newspaper publishers across the globe will spend the best part of the next year trying to find out whether their audiences want to consume their product electronically; how much they are prepared to invest in doing so – not necessarily in subscription fees but in time and participation – and whether advertisers can be persuaded to build on their initial encouraging interest in the interactive medium.

● *Stephen McGookin will report on the latest developments in Electronic Newspapers in the 'A-Z of the Internet,' an FT-IT magazine due to be published next month.*

■ CD-Rom systems – By Geoffrey Wheelwright

Rapidly becoming standard

It is already very hard to find any new desktop computer that does not include a built-in CD-Rom facility

This year is likely to be remembered as the one in which CD-Rom, the data storage format based on Compact Disc technology, became the standard for distributing commercial software and started to take off as a way for corporate computer users to archive their data.

According to statistics from London-based First Information Group, a leading UK multimedia company that produces CD-Rom titles and prepares CD-based training materials for corporate clients, there were more than 49m CD-Rom drives installed worldwide by the end of last year – with that number predicted to rise to more than 400m by the year 2000. The company also predicts that the percentage of UK homes with CD-Rom-based PCs will grow from a mere 2 per cent in 1994 to 32 per cent by the end of 1998.

These figures confirm what most in the computer industry already know: CD-Rom hardware is the fast-becoming standard on all desktop personal computers, and even many high-end portable notebook computers. In fact, it is already very hard to find any new desktop computer that does not include a built-in CD-Rom.

Since software published on CD-Rom is much cheaper for software manufacturers to produce – the huge capacity of a CD-Rom means that manufacturers do not have to put dozens of floppy disks in each box on which to hold the software, and they can publish an electronic version of the manual *instead of printing* a large, bulky and expensive paper version – it is also becoming the preferred way of offering new software.

Offering software on CD-Rom also cuts down on piracy, because it is extremely time-consuming to copy up to 600 Mb from a CD-Rom on to floppy disks – or the hard disk of another computer.

For users, software published on CD-Rom lets them get to work more quickly. *There is no sitting in front of* the computer constantly inserting new floppy disks while the software is being installed. Users installing new software from a CD-Rom typically just have to issue the necessary commands to set up the software and can then have a cup of tea while they wait – without worrying that the computer will be screaming for attention every few minutes.

In addition to its popularity as a distribution medium for commercial software, a new breed of affordable, recordable CD-Rom – known as CD-R – is causing many corporate computer users to turn to CD-Rom as a fast and inexpensive way of backing up their vital corporate information. In the US, for example, CD-Rom recorders are available for less than $1,000 and allow users to create CD-Rom discs that can be played on any standard CD-Rom drive – as well as play standard CD-Rom discs from commercial vendors.

For example, Pinnacle Micro (a pioneer in the CD-R business), *introduced a new* Recordable CD system in early January with a starting price of only $995. Known as the Pinnacle RCD 5040, this system is distinguished not only by its low price: the performance is also superior to that of many previous CD-R systems – while it is a 2X CD recorder, it can read CD-Rom software at 4X (quad) speeds. The company expects the RCD 5040 to appeal to both the corporate and consumer markets for data archiving and making low-cost, custom CDs.

The new RCD 5040 Recordable CD system replaces its predecessor, the RCD 5020 and comes in both internal and external models.

Pinnacle suggests that it has a good shot at the traditional magnetic tape backup market by offering CD-R systems at this price with improved performance. For this reason, both Mac and PC versions include *custom Backup Utilities which* allow you to create permanent archives of data held on a hard disk. Pinnacle says the PC version, CD Archive, offers the only Microsoft Backup Compatible utility for backing up data to compact disc.

Not surprisingly, the company is bullish on this product – and the whole CD-R market. "The CD-R market is exploding," said Scott Blum, executive vice-president of Pinnacle. "We are expecting sales to continue growing rapidly." He even predicts that CD-R systems will replace tape drives and CD-Rom players in the near future.

Equally enthusiastic is Hewlett-Packard, which also launched a low-cost CD-R system last October. HP's entrant in the low-cost CD-R race is an internal DOS/Windows offering known as the HP SureStore CD-Writer 4020i and its recommended price is $1,249 (although the company says its street price is about $1,099).

Until the release of the new Pinnacle system, the SureStore *CD-Writer 4020i* was one of the few CD-R systems at anywhere near the $1,000 mark that offered 4x CD reader and 2x CD recorder capabilities which installs in a PC's half-height 5.25-inch bay.

As with most CD-R systems, it lets you record up to 650MB of data or 74 minutes of audio on a single CD-R disc. It also reads standard digital and audio CDs. And as with the Pinnacle system, HP included a collection of bundled applications to make the offer more attractive. The CD-Writer 4020i includes a utility called Easy-CD (an extension of the Windows file manager that works with the CD-R drive), another called Alchemy Personal (which is supposed to let you create and search custom databases and includes a run-time search engine for use on any PC with a CD-Rom drive), one known as Magic Lantern for photo CD viewing and finally something HP has dubbed Easy-CD audio, which *lets you create your own custom* audio discs.

The biggest attraction for any of these drives is that they offer tremendous value in terms of the cost per megabyte for long-term storage of data. In the US, the street price for blank CD-R disks has dropped to $12 or less. And when you consider that you can get 650 Mb for this price – or more, if you use compression technology to store the files – this is far cheaper than using 500 or more floppy disks or even the blank media for many tape drives.

Fast access to online services

Continued from previous page

sations, will soon be offering content to consumers through Rogers WAVE."

Those who use the service need to have a minimum 486SX 25 megahertz processor with 8MB of RAM and a Super VGA monitor. Subscribers are then equipped with a cable modem, rental of which is included in the price of the service. The service also includes a range of services Rogers Wave has assembled.

These include Wave Web links to explore the Web for entertainment and learning, a facility that Rogers calls "Tidal Wave" Web links which give users access to specially-designed high-speed content such as Lifeline and the Life magazine's online publication – as well as electronic mail capabilities

If Rogers encounters no big *stumbling* blocks during this trial, the company will make the service available in a number of additional Canadian markets later this year with widespread access to the service in 1997.

Through a consortium involving Rogers Cablesystems, Shaw Communications of Calgary, and Groupe VidTotron of Montreal, the cable service will be available nationally in Canada as Rogers' partners Shaw and VidTotron roll out their versions.

Rogers is also making the Wave service available for schools in an initiative directed to students from kindergarten through to Grade 12.

Wave for Schools provides users with high-speed interactive access to a suite of content, including the Internet, Industry Canada's Schoolnet, libraries and databases.

Future educational services will include online newspapers, magazines, museum databases, and other information facilities.

Students will also be able to participate in online lessons.

The company is investing $4.9m over three years to provide Wave for School to 600 schools in Ottawa, Etobicoke, Mississauga, Brampton, London, and Woodstock, Ontario. The service will be available free of charge for the first two years.

Finally, there is a Wave for Work service, offering a link between corporate offices and staff working at home. For the *technical trial, Rogers is working* with IBM Canada, a company already operating an extensive telework programme, called Flexi-place, with 1,100 employees across Canada, working away from the office.

Through a cable modem, Wave for Work provided employee access to a suite of information services and IBM computer applications available through IBM's Global Network, including services previously inaccessible from home, such as application-sharing and interactive multimedia applications.

■ CeBIT 96: trade fair preview

6,000 exhibitors head for Hanover

More than 6,000 exhibitors from 60 countries will be taking part in the largest-ever CeBIT show at Hanover, Germany – the annual office, information and telecommunications trade fair which takes place this year from March 14 to 20, *writes Michael Wiltshire.*

More than 1,500 exhibitors – a record – will take part in IT categories which will fill seven large halls.

In the network category, there will be 450 exhibitors, many of them highlighted in special displays such as News Net 96, ATM World and the Networking Centre.

More than 2,000 exhibitors will be featured in the Software Centre. Other large areas will focus on banking and financial systems, computer-integrated manufacturing and design, consulting and services, security equipment and card technology, plus a wide range of business and office systems.

The event, which will be open daily from 9am to 6pm, has also attracted a record number of UK exhibitors – 323 compared with 266 at last year's event. "CeBIT is clearly the place to be this year if you are in the IT industry," says Mr Arnold Rustemeyer, general manager in the UK for the show organiser, Deutsche Messe.

Last year's show attracted more than 755,000 visitors of whom 100,000 were from outside Germany.

For more details, telephone Hanover (0)511 893 80 11/12; fax (0)511 893 80 03.

■ The electronic office

Drowning in a sea of documents

'Too much executive time is spent at the photocopier'

Most offices today "are awash in sea of documents – both digital and paper," says Russell Peacock, general manager of Rank Xerox office document products.

Ten years ago, the average number of documents handled by a worker was less than 30 fax/print/copy pages a day. By the end of this year, it will be 70 a day (including digital documents) predicts Xerox.

But Mr Peacock believes so-called "knowledge workers" do not have adequate control over the three stages of document production:

- ☐ Document input – the creation, scanning or electronic capture of information.
- ☐ Document management – the ability to store, retrieve, summarise, share and manipulate content.
- ☐ Document ouput – local or distributed printing, copying, faxing and viewing.

In most offices, personal computer-users depend on an eclectic mix of devices, some of which – copiers, fax machines, scanners – are not even on the network. So they spend time 'walking' documents from slow laser printers to faster copiers.

This creates bottlenecks in key processes and low productivity. To put it another way – too much executive time is spent at the photocopier.

Xerox has a strategy for dealing with this. It has just launched two Document Centres which can be connected to networks. These enable users to print, fax or copy documents from a PC.

An added benefit is that users can deal with paper and digital information in an integrated way. For example, paper pages can be scanned into a Document Centre and combined with digital data to produce multiple copies of a finished, stapled report.

The Document Centre System 20 – for networks of 20 users – costs £13,660. The System 35 for groups of up to 50 costs £27,280.

Rank Xerox believes that the business of bringing office services to the desktop will be worth $1bn by the year 2000.

Integrated document management

The company is certainly not alone in believing that users want to be able to manage their documents in a more integrated way. Other suppliers are busy forming alliances, or taking over companies so that they can sell a wider range of products for the electronic office.

US-based image processing supplier, FileNet, has agreed to acquire Saros, a US company *specialising in* document management and Internet web-server software. Last year it acquired Watermark, which sells desktop image processing and workflow software. It has also entered into an agreement with network company Novell which integrates FileNet's workflow solutions with Novell's products.

Microsoft has an agreement with Wang, which enables it to give away Wang's ImageView image processing software with its latest version of the Windows operating system, Windows 95. This enables Microsoft to gain entry into the image processing market, and Wang to gain even more experience of desktop computing.

"This is image processing for everyday work, without needing a large, centralised system," says Roger Whitehead, director of the Office Futures consultancy and editor of *Workgroup Computing.*

Component software

Another trend in the electronic office is the move towards component software. Lotus, the software company owned by IBM, is the first large supplier to offer components (small parts) of its software applications via its Internet web site.

At present, these are only available for users of Lotus Notes 4.0, a groupware and conferencing application. But "other major suppliers, such as Novell and Microsoft will soon follow," says Whitehead. Wang's ImageView software can also be downloaded from the Web.

Enjoy it while it lasts: software suppliers are likely to offer component software free as an experiment, then start charging.

As this component software example shows, no office is an "island" – and being able to exchange documents and software with the outside world electronically is also important. This facility should become easier as more deals – combining software and telecoms companies – are struck. For example, Microsoft and US telecoms company MCI have agreed to market each others' services: MCI will distribute and sell Microsoft Network, an online service.

Just-in-time hotelling

But with growing use of mobiles, satellite networks, Internet e-mail and portable PCs, will anyone be working in the office of the future?

Probably – a halfway house is "hot-desking", where users spend a lot of time out of the office but are allocated desks as and when they need them. Andersen Consulting – no stranger to the practice of "hot-desking" – is using what it calls "just-in-time hotelling" in its Paris offices.

When employees arrive, they check in by swiping a smart card through an interactive station. They then know which room has been allocated to them and can be tracked down easily by reception staff. Once in their allocated room, employees have access to Octel voice mail and Lotus Notes electronic mail.

Andersen Consulting says its consultants can book space in the office as if they were booking a hotel. There is even a first-class style lounge containing smaller workspaces, and comfortable couches for chatting with colleagues.

The lounge area does not have to be booked, but lounge lizards be warned: Andersen's launch information says the lounge "enables everyone to relax for short periods of time" while waiting for a meeting, filling in a time-sheet – not everyone's idea of relaxation – or picking up messages.

Whatever the office of the future looks like, it won't mean shorter hours.

Joia Shillingford

■ **Document management** – By Geoffrey Wheelwright

New era of integration dawns

Photocopiers, printers, scanners and fax machines will all live on the local area network

Document management is now being tightly integrated with existing personal computer-based local area networks (Lans) by means of advanced office equipment.

The clearest indication yet of this came late last year with announcements by Hewlett-Packard and Xerox Corporation, both of which pointed the way to a world where photocopiers, printers, scanners and fax machines will all live on the local area network to provide document management functions – and it will be network managers, rather than office equipment managers, who will be charged with maintaining and installing them.

HP's announcements came first. In early October the company unveiled a networking strategy for printers and associated products that it calls "received printing". The idea is that as documents are increasingly being received in digital format (for example, via corporate fax modems and network fax gateways) and are being distributed digitally (via electronic mail), there will be a shift towards allowing users to decide how and when (if at all) those documents move from computer screen to paper.

For example, rather than the cumbersome task of passing around a company internal memos and received faxes on paper, the network would handle the process digitally and users would decide for themselves which documents they wanted to print out – and which devices they would use to print them out.

In a speech at the annual Fall Comdex trade show in Las Vegas, Richard C. (Dick) Watts, HP vice-president and general manager of the Personal Information Products Group, elaborated on the HP strategy.

Mr Watts said that HP wanted to change the way documents were handled and he described what he called a new "distribute and print" model for paper management which would eliminate the older and inefficient print-multiple-copies-and-distribute model.

The "distribute and print" model allows network scanners to serve as efficient and versatile on-ramps to the information highway or network system. The idea is that when HP network printers are combined with HP network scanners, information can enter the network system easily – then be delivered electronically and printed as multiple originals.

Xerox also took a similar line last October when it launched a family of digital document office systems that allow users of networked personal computers and work stations to perform new document production and distribution services from the desktop. The company says these systems are designed to create "a new category of office device that improves office productivity by bringing an array of advanced document services to the desktop".

But what the new Xerox Document Centre System 35 (designed for up to 50 users on a network) and Xerox Document Centre System 20 (designed for up to 20 users on a network) machines really do is provide office equipment that is used, controlled and managed over the network.

These systems are likely to move responsibility for many forms of traditional office equipment from the office and office equipment manager to the network manager – as the performance and reliability of the network now become vital to the proper operation of this new generation of office equipment. In addition, it will be the network that will tell users and administrators alike whether a given machine needs toner, needs to have a different size of paper loaded or has run out of staples.

According to Paul Allaire, chairman and CEO of Xerox, there has been a problem in how the documents used in an office have been perceived. "Until now, offices have been networked, but documents haven't," he says. "Gains in individual output and personal productivity, expressed in the exploding growth of new digital documents from PCs, software and networks, have not translated into gains in the productivity of work groups. This is because a variety of incompatible user interfaces, formats, operating systems and network environments make distributing and sharing these documents difficult. Technology often gets in the way, causing delays, bottlenecks and non-productive steps in people's work. It's a clear and pressing problem."

He suggested that by making documents a network resource, much greater value can be gained from them. "There's a deeper issue – the work group where people work together creatively and collaboratively in teams is where the collective knowledge that typically creates business value is shared, built and used," suggested Mr Allaire.

"Energy which should go into the work itself – creating content and adding value to information – is diverted into working around the barriers and bottlenecks and doing what people consider to be unproductive, mundane tasks. This is a root cause of lagging office productivity and mounting worker frustration."

The Xerox solution is the company's new Document Centre product. "We called it Document Centre because we believe it will be seen as a real centre of expertise and centre for services that knowledge workers can go to and depend on for managing the daily flood of inputs, outputs and processing tasks that characterise the cycling of documents and the cycling of knowledge work," said Mr Allaire.

"At one level, Xerox Document Centre customers will be scanning, faxing, printing and copying – from anywhere in their workspace. At another level, they will be using, gathering, building, creating and sharing the knowledge needed in their work. Until now, our desktops have been connected electronically through networks. With Xerox networked document systems, the vision is we can connect our ideas through documents.

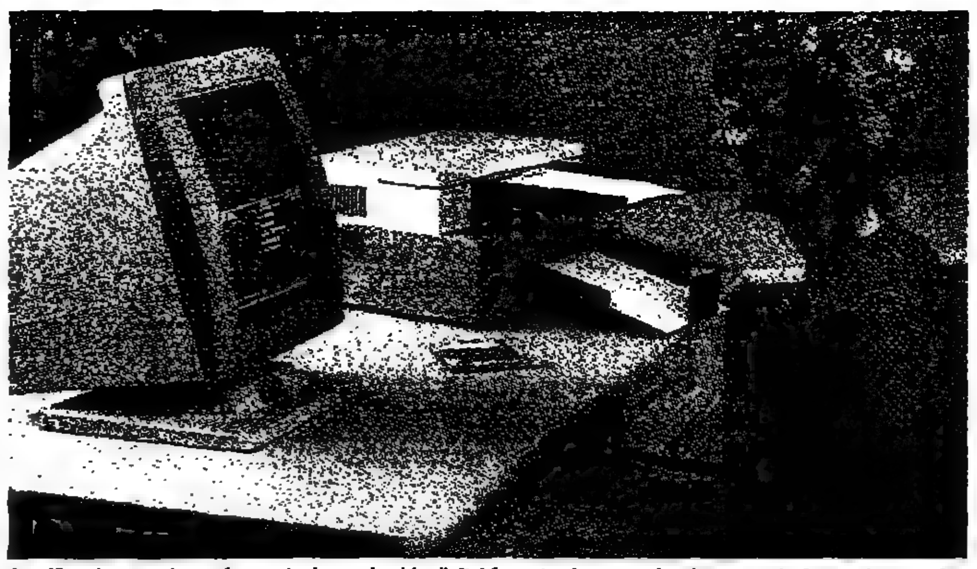
"With this new category of office document systems, we believe that many of the frustrations, delays and bottlenecks will gradually fade into the background and more energy will be channeled into the creation and enhancement of content – the good work we call 'knowledge work.'"

But the real question in offices around the world will be whether or not it actually solves any problems.

There may well be many advantages to be gained from an office where document distribution takes place principally over the network – but the teething experiences that a large number of corporations have had with the reliability and implementation of new network-based services could well colour their judgment in accepting the idea of technologies that try and bundle a whole bunch of services together.

The key to the success of this kind of technology will lie in whether or not it really does add up to more than the sum of its parts. That has so far been the downfall of most fax-copier-printer-scanner "multi-function" products and document management services – they do not do any single function as well as the best of their single-function counterparts. They also require that you commit yourself to a single device when some users are wary of having all their technological eggs in one basket.

After all, when your fax machine goes down, it does not usually take your printer, scanner and photocopier with it. But on a multi-function device it does. And on an networked multi-function device, used for document management, that could affect a lot of people.



As office documents are increasingly received in digital format – for example, via corporate fax modems and network fax gateways – and are being distributed digitally, via electronic mail, there will be a shift towards allowing users to decide how and when (if at all) those documents move from computer screen to paper

■ **Office computing:** – report by Jola Shillingford

Strong demand for client-server software

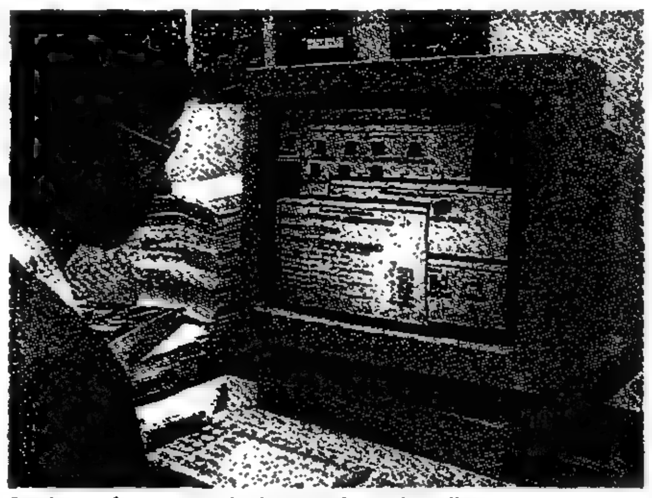
The latest products are providing better security and performance monitoring

Early client-server systems often served a single department, but now they are spreading throughout whole organisations. Companies are starting to base their whole computing environment on the client-server model, where processing is shared between "client" PCs and more powerful "server" systems.

Citibank opted for a client-server solution when it wanted to offer common funds transfer (FT) across Europe. It is using a combination of the Windows NT operating system (on servers and eventually on PCs) and Microsoft's SQL Server database as a starting point for entering details of FT transactions, which are still processed on the mainframe. But key processes are gradually being moved off the mainframe and onto Compaq servers running SQL Server.

Company-wide client-server brings new management challenges. For example, IT managers must work out what data is required throughout the organisation and where it should best be stored to minimise network traffic. They must also work out how to integrate the company's older computers (such as mainframes) into the new environment.

Another challenge is to design a client-server system which is flexible enough to cope with changes in the company's business. "Some client-server systems are in danger of becoming legacy systems (systems that can't adapt)," says Eric Woods, a senior consultant at researchers Ovum.



Good news for users: easier-to-use software is on the way

Mr Woods believes that companies designing their own client-server development tools and middleware (software for extracting data from different systems) are "crazy".

"The complexity of client-server means that you have to delegate some of these issues, and let vendors worry about connectivity and staying up to date," says Mr Woods.

The good news for users is that client-server software is improving. The latest products are providing better security and performance monitoring. They are also easier to use.

In particular, more and more suppliers are competing to establish their middleware products as the industry standard. "Good middleware should make a complex distributed environment look like a single machine even if it includes Windows PCs, local area networks, Unix systems and mainframes," says Woods.

The six types of middleware include:

☐ Database connectivity products, such as those offered by Information Builders;

☐ Remote-Procedure-Call (RPC) based systems. RPC is one of the fundamental building blocks of middleware;

☐ Message-oriented middleware, such as IBM's MQ Series;

☐ Object-request-brokers (Orbs). Choices include Microsoft's Ole (object linking and embedding) and Iona's Orbix. The Object Management Group is attempting to define an industry standard for Orbs;

☐ Distributed Computing Environment (DCE) based systems. DCE services (included with powerful systems from IBM, Digital Equipment etc) help to make several linked machines look like one. Products which simplify the process include Entera from Open Environments and Encina from IBM (based on a TP-Monitor); and

☐ Distributed Transaction Processing (TP) Monitors eg Tuxedo from Novell and CICs from IBM.

Object-request-broker products are probably closest to

Continued on next page

■ Mobile computing/remote access – By Michael Dempsey

At home with the office

Getting mobile staff online via their notebooks justifies the cost of expensive state-of-the-art equipment


Alistair McCrae: his staff at Sketchley use laptop PCs to help maintain garmenet "wearer records" on the company's 650,000 end-users

A recent survey of 400 notebook PC-users throughout the UK, Germany, France and Sweden revealed that most users still do not link their portable computer to the office network.

A poll carried out on behalf of PC-maker Dell by IDC, the research group, shows that less than half the companies in Europe using portable computers also support remote communications. This compares with 80 per cent of similar US companies linking notebooks to the office..

In the Dell-sponsored survey, 35 per cent of respondents said their notebooks were not connected to the office. Notebook users tended to take their machine home, working from there for an average of 5½ hours a week. But only 30 per cent accessed office resources when working from home.

Because Dell makes notebook PCs, it has an obvious interest in encouraging their use among the working population – and the company uses an attractive argument to encourage remote access: getting mobile staff online via their notebooks not only increases personal productivity, it also justifies the cost of expensive state-of-the-art equipment.

Dell claims that an aggressive attitude to remote communications means the return on investment can occur before half the depreciation period has gone by.

One company that has taken this message to heart is clothing rental giant Sketchley Textile Services. With a £55m turnover and 1,800 employees, Sketchley keeps a significant portion of British industry in clean work garments. Some 650,000 people, working for companies as big as Ford and British Aerospace, wear overalls and uniforms issued by Sketchley. These clothes are rented by the customer, with Sketchley undertaking to replace worn-out items and keep up with the employee's measurements.

It is an enormous task which used to be carried out by a field force who were equipped with paper forms and who had to key in data when they returned to their offices.

Sketchley has 30,000 business customers who can send rented garments to any one of seven regional centres – and the company then has to return each garment back to the person who wears it. Field staff armed with Compaq laptop PCs are the key to maintaining this service.

Alistair McCrae, sales and services director at Sketchley, explains that personal contact is the only way to match the company's product with the continually shifting profile of customer employees. "We have to keep making inquiries to know that the contract is meeting expectations. You have to talk to the people you're clothing. Are they getting fatter or thinner? Have they changed jobs and do they need a new outfit?"

McCrae's staff maintain wearer records on every one of its 650,000 end-users. The records detail the name of the staff member and give individual outfit size and type and they also note how often a garment is changed. In the food industry, hygiene requirements mean that this will be every day. Garments are turned around in one week, and Sketchley receives 10,000 requests to alter garments every week.

All this data is held on a large Digital Vax mainframe computer. But this machine is fuelled by regular input from the field force. The key 'data window' at Sketchley lasts six hours and begins at 10pm every Sunday. Field staff plug their laptop into a home modem line by 10pm and during the next six hours the laptops are polled by the mainframe operation.

Development software from Cognos, costing £250 for each laptop used by the 30-strong field force, allowed Sketchley's data processing manager George Donnelly to design a data downloading regime that was compatible with the group's mainframe.

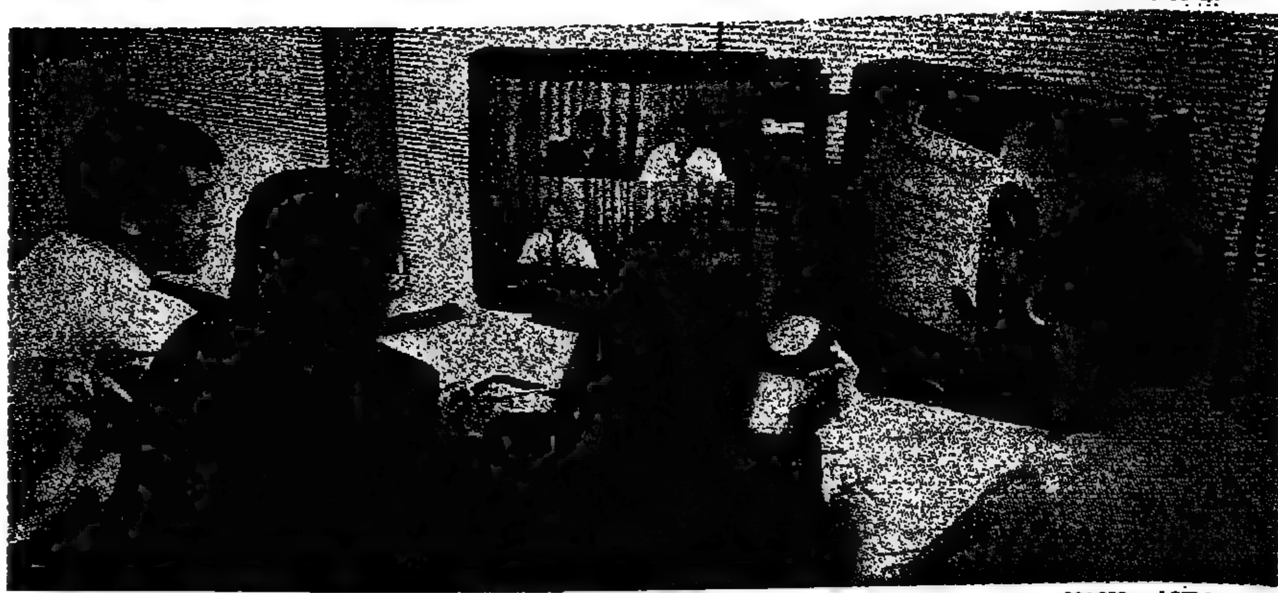
The total cost of moving from paper to a laptop-equipped mobile workforce came to about £80,000, but McCrae says this is money well spent, citing the competitive nature of the commercial garments business.

Sketchley has a £4m programme to issue all 125,000 employees of J. Sainsbury, the UK food retail chain, with an entirely new uniform. The shift from a familiar orange outfit to the new blue uniform was a big exercise in product branding. There cannot be any delays in such a huge marketing exercise.

Sketchley relied on the laptops to gather and transmit relevant data on the client's workforce and the reclothing of Sainsbury took 21 months. With 23 years at Sketchley and a long time in the field writing down measurements on paper, Mr McCrae has no doubts that remote access is the only way ahead – "we're in a highly dynamic business. We need to change as the customers change".

The US has led the way with remote access but, as Sketchley illustrates, Europeans are catching up. Symantec, a $750m software house, sells PC Anywhere. This £149 package allows portable PC users to dial in from an outside location and replicate the facilities of an office machine on their laptop screen. So a technically-outdated machine can call up software running on the latest Pentium workstation.

Symantec claims a million users for this product; 70 per cent of them in the US. However, the company believes that a change is under way; Scandinavian companies, faced with staff distributed over remote and difficult terrain, are signing up for PC Anywhere. As company accountants demand better utilisation of expensive portable PCs, remote access has a big future.


Reaching a wider audience: British Telecom's new visual communications systems, the VS3: a single monitor version costs £24,000 and £27,000 for the double version. In a recent deal, PictureTel's videoconferencing equipment was also included in BT's portfolio of conferencing services.

■ High-speed ISDN lines

A central concept for converging technologies

Fast digital phone links deliver voice, pictures and even videoconferencing, writes George Black

ISDN looks set to become a central plank among the convergent technologies underpinning the information society of the twenty-first century.

Digital voice and data telecommunications systems worldwide are being built on ISDN and it is likely to become a mature market in the next few years.

The international digital network is becoming popular because it gives faster and clearer connections than the old analog network. Businesses appreciate it either because it is cheaper than the alternative methods of communication or because it enables them to do things they could not do before – or both. In some cases, ISDN may represent a significant competitive advantage.

"It will undoubtedly be a major influence on the information technology of the future," says June Campbell, ISDN business development manager for BT, the UK's largest ISDN operator.

While ISDN is a 1970s' concept that met with slow implementation, a European study by the Yankee Group Europe last year concluded the technology "is about to hit the big time." It put the annual growth rate across Europe at more 40 per cent.

A UK survey by Computer Intelligence for network equipment vendor Eicon Technology, found that 78 per cent of technology managers expected their use of ISDN to increase this year.

Yankee Group says that promotion by the public network operators, especially in Germany, the advance of the Euro-ISDN standard, a boom in software applications and rising demand for access to the Internet were the main causes of the growth.

In the past couple of years, ISDN has been adopted by many retailers for routine credit card validation. They also increasingly use ISDN lines for polling their branches to gather sales figures. Some have replaced modems by ISDN, though modems are becoming faster and cheaper and cannot yet be written off.

Virtually every sector of the economy has taken up ISDN, ranging from manufacturers transmitting design drawings to hospitals remotely accessing X-rays, to colleges introducing distance-learning programmes. Recently, ISDN has extended its customer base from large companies to medium-sized and small businesses.

Design companies use it to pass their artwork to advertising and public relations agencies and their customers for comment before sending it, again via ISDN, to the printers.

Benefits

These companies often like to conduct videoconferencing over ISDN, so that they can discuss their work face-to-face with their customers.

Many people in these types of small business are now teleworkers, who could benefit from remote access to their customers' local area networks. BT wants to target them as potential ISDN customers, but this calls for an improvement in the network's coverage, which is not yet fully nationwide.

BT's trials of new equipment this year are intended to increase that coverage to virtually everyone in the country who might subscribe to ISDN. If these tests succeed, BT may launch a marketing campaign aimed at teleworkers.

The spread of ISDN has been boosted by the forging of international standards. As Euro-ISDN has gained in credibility, certain countries outside Europe, such as South Africa and Israel, have recently moved towards adopting it. In the US, too, there has been growing interest from regional phone companies. International connections can still cause problems, but these are gradually reducing.

Standardisation is expected to force equipment prices down. Euro-ISDN clearly demonstrates the virtues of the single market.

Racal-Datacom of the UK was able to introduce Euro-ISDN products in 15 countries at once, though there are still extra tests to be undertaken in some countries before equipment can be connected to the public network.

Racal's senior marketing manager Colin Watts says the advance of Euro-ISDN is "an enormous step forward". However, a few doubts still cloud ISDN's prospects: one issue is how it will relate to ATM (Asynchronous Transmission Mode), a networking standard which has technically much in common with ISDN and is also being hailed as an essential feature of converging technologies.

Experts remain unsure about what will be the relationship between broadband ISDN, the newest version of the system, and ATM. The present signs are that they will be complementary, rather than competitive.

"Large networks may well have ATM backbones and ISDN spokes," says BT's June Campbell. ATM's advantage will be its power, whereas ISDN's strength will lie in its flexibility, in her view.

Another problem is that many users do not understand how to instal ISDN most effectively. Racal's Colin Watts says there is still a need for an educative process.

A third source of concern is the role of BT, which maintains considerably higher prices for ISDN than some of its European counterparts. Equipment vendors have urged it to change this, arguing that BT's costs for installing ISDN have fallen, so its customers' bills should also fall. But BT responds that it is constrained by the regulator Oftel, which frowns on cross-subsidies from one business area to another.

Cable television companies now offer ISDN, which may put more pressure on BT to reduce its charges.

■ Cellular telephony – By Jola Shillingford

Mobile telecom services seek ways to add value

Orange will soon introduce a 'Mystic Meg' astrology line and a sportsline

In 20 years' time, mobile voice calls will be virtually free and suppliers will make their money from value-added services (VAS).

The services offered by PCN (Personal Communications Network) operators such as Orange and One-2-One, and GSM (Global System for Mobile) operators such as Vodafone and Cellnet are not that different. This is because PCN is simply a variant of the GSM digital standard.

The main difference is in which services they charge for and how hard they promote them.

The most popular VAS of all is voice mail. Vodafone says it has 550,000 subscribers for its Recall voice mail service. And at soon-to-be-floated Orange, voice mail and Calling Line Identity (which flags up the caller's number) are the most popular value-added services.

Hubert Tardieu, head of Sema's telecoms business, says: "Mobile network operators like voice mail because it generates extra revenue without them having to charge more." Most operators provide free voice mail, but earn more when subscribers phone back the people who have left them messages.

There is also a growing number of information services available to mobile users. Vodafone is about to introduce a share information service, which will display prices on a mobile's liquid crystal display (LCD).

Orange will soon introduce a Mystic Meg line (astrology) and a Sportsline.

Mercury One-2-One's smartcard comes programmed with useful fixed-line numbers for Interflora, Ticket Master, AA services and so on.

There are also a growing number of mobile data services. These fall into three categories according to David Danieli, a spokesman for Vodafone:

Short message service

This facility – SMS – is rather like paging and allows alphanumeric messages of up to 160 characters to be sent to a GSM mobile's LCD. Short messages can also be sent from a GSM handset by pressing certain keys repeatedly, for example one press equals a, two presses equals b and so on.

If this sounds cumbersome, short messages can also be sent from a Psion 3a Organiser linked to a suitable phone (a Nokia 2110, Orbitel 945, or Philips 747) and Vodafone's GSM service.

A phone such as the Nokia 2110 costs £100 from Vodacall. The user will also need to buy an extra kit costing £49.95 that includes a cable and software. The cable plugs into the phone; the card at the bottom end of the cable plugs into the Psion.

Sending short messages from a Psion is easier than from a mobile handset because it has a full (though not full-sized) keyboard. Psion has a six-month exclusive agreement with Vodafone, but other organiser suppliers, such as Texas Instruments, Sharp and Hewlett-Packard will soon bring products to market based on a similar concept.

SMS can also be used from a PC. SMS is cheap at 10 pence a message and it is possible to get an SMS-only tariff. There are roaming agreements allowing interoperability between Vodafone and some other European GSM operators. Or between Cellnet and other operators.

However, there is no SMS interworking agreement between Vodafone and Cellnet, according to Danieli. So a Vodafone user cannot send a short message to a Cellnet user.

In addition to SMS, GSM mobile users who travel with a portable computer can buy a kit to link portable and phone. Again, they will need to use a phone designed for data such as the Nokia 2110. They will then be able to use the portable to send and receive electronic mail, access databases or send faxes.

Among PCN users, Orange customers have access to mobile data, One2One users will get data services later this year (as well as CLI and international roaming).

However, one drawback of sending data over cellular is that data transmission speeds are not particularly high: speeds of up 9,600 bits per second are typical. On the plus side, mobile data is far more convenient than trying to hook up a modem to the hotel phone.

Most of the new value-added services are being offered for digital networks, which are harder to clone or bug, and better for data. However, new security features are being introduced to prevent cloning on analogue networks.

On April 1, Vodafone will issue its analogue subscribers (it has analogue and GSM networks) with a special Personal Identification Number. This must be typed into the handset and thereafter it will generate a series of random security PINs.

This means that even if a would-be phone cloner could crack the code, by the time he/she had done so, it would probably have changed.

The authentication feature will work only on handsets designed to accept authentication (usually manufactured after May 1993). These are owned by about half of Vodafone's two million analogue subscribers.

As many as several thousand might prove faulty and, if so, will be replaced free of charge by Vodafone. Other Vodafone analogue subscribers will either need to buy a new phone (with built-in authentication PIN), or transfer to a GSM service.

To find out their new PIN, customers need to contact Vodafone's authentication centre, or their service provider.

Future

The future promises all sorts of exciting value-added services for mobiles. Mr Tardieu thinks digital mobiles (with SIM – subscriber identity module – smart cards) could be used as payment devices in a year.

He says it is possible to include all sorts of information that identifies the user in the smart card, which could also have credit/debit card features built in.

In the UK, smart cards are not widely used in banking, but Mr Tardieu says a leading British bank is testing a mobile smart card/credit card combination.

Mr Tardieu says: "The ability to pinpoint the location of a mobile user could also be used to good advantage by emergency services and others." For example, if a mobile user phones 999 or the AA, the call could be transferred straight to the nearest police station or rescue centre.

"Such services won't happen immediately, but when they do they will really add value for the mobile user," says Mr Tardieu.

Strong demand for client-server software

Continued from previous page

what users want but furthest from full realisation. They can make different software applications behave as if they were one. The idea is that each block of code retrieved by the Orb contains not only data, but the instructions to process it.

"But in the end, users don't really care what the underlying technology is, they just want the environment simplified so that it can answer business needs," says Mr Woods.

As well as middleware, companies need client-server tools to build applications. Popular tools include Microsoft's Visual Basic and, for larger networks, Seer from Seer Technologies or Forte from Forte Technologies.

"The tools used in early client-server networks, such as Powerbuilder and Visual Basic, do not have the capabilities to support large, complex development environments," says Mr Woods. "People should be looking for tools that hide complexity but give greater flexibility." However, as client-server systems become more established, there are many more ready-made software applications to choose from.

R/3, a financial package from SAP has sold well. Other client-server based applications offering finance and other key business functions include CS/3 from Tetra and SmartStream from Dun & Bradstreet Software. Benefits such as low upfront costs and fast applications development are helping to drive the client-server market. According to a Tetra/*Computer Weekly* survey, 58 per cent of companies interviewed plan to move to client-server in the next two years.

Many client-server networks are based on so-called "fat" clients: usually PCs with a lot of local software and memory. But the notion of using Internet Web technology to link dissimilar company systems is taking hold. For certain applications, "thin" clients which simply view information on remote systems, can be one of the most effective ways of doing the job.

■ Wireless computing/office telecoms – By Jola Shillingford

Window on a wireless future

Cordless extensions are three times as expensive as standard corded

Media mogul Rupert Murdoch believes that we are moving to a wireless world and – with MCI, the long-distance phone company – has bought a US satellite TV network to prove it. The plan is to use this, not just for television, but also to give businesses and consumers high-speed access to data services, such as the Internet.

Part of the impetus for wireless office services comes from users' experience of mobile telephony. They are starting to want the same convenience and flexibility inside the office as they get outside.

But, as with mobile telephony, wire-free solutions for the office tend to come at a premium.

Cordless phones

The cordless PBX (switchboard) market increased in 1995, showing that some users are willing to pay a premium for cordless functionality, says Diane Trivett, an industry analyst at Dataquest – "but to realise full market potential, the price needs to fall further".

Cordless extensions are three times as expensive as standard corded ones. But they can help to improve customer service because it is easier for callers to track down the person they want. If fewer calls are missed, the organisation will also spend less money calling people back.

There are two standards for cordless office phones: DECT (Digital Cordless Telephony) and CT2 (the digital technology behind the former Rabbit telepoint network). Most see DECT as the cordless office standard of the future, but Northern Telecom has had some success with CT2.

Dual-mode handsets are also being developed. These are cordless phones, working to the DECT standard, in the office; and mobile phones, working to the Global System for Mobile [GSM] standard, outside it.

Val Simpson, product marketing manager at GPT Communication Systems, believes that "the future of mobile telephony for businesses has to be dual handset working".

At present, key drivers for the cordless PBX (CPBX) market are the introduction of new products, improved distribution strategies and falling prices.

In the early days, users had only a few CPBX suppliers to choose from: Nortel, GPT and Ericsson. Now most of the traditional PBX suppliers are in the market. They include: Alcatel, Ascom, AT&T, DeTeWe, Matra, Peacock, Philips and Siemens.

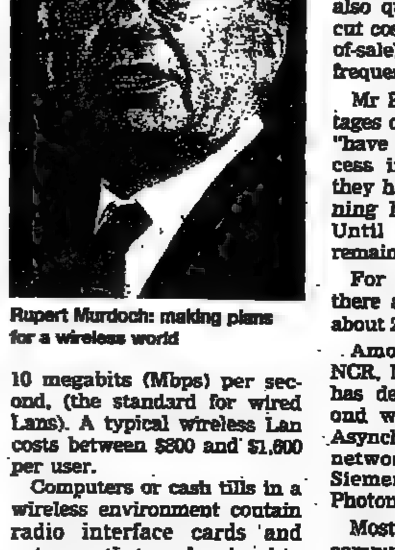
Vendors, such as Mitel and Multitone, act as value-added resellers for others' systems. More new entrants are expected in 1996, including Panasonic, Hagenuk and Bosch Telecom, together with new products from existing players such as Siemens, Matra and Ascom.

By 1999, Dataquest predicts that the European digital CPBX market will grow by 500 per cent from $115m in 1994 to $716m. In terms of shipments, the market will increase from 4,500 systems and 82,000 cordless handsets to 62,625 systems with 1.9m handsets.

DECT is expected to account for 85 per cent of the market in terms of system shipments, leaving CT2 with just 15 per cent.

But these take-up levels will only be achieved if the price differential between cordless and fixed systems falls even further. Another premium-priced wireless solution is the wireless local area network (Lan). Computer suppliers such as AT&T and Digital Equipment are still very much in favour of wireless Lans and believe that they will be a growth area in future.

This has yet to happen. Mark Purdom, a research analyst at Dataquest, says that most wireless Lans cost three or four times more than a wired Lan, are less standardised, and operate at less than 10 megabits (Mbps) per second, (the standard for wired Lans). A typical wireless Lan costs between $800 and $1,600 per user.


Rupert Murdoch: making plans for a wireless world

Computers or cash tills in a wireless environment contain radio interface cards and antennae that send a signal to the nearest base station.

A series of base stations (usually mounted on the ceiling) provides a backbone network that links all the devices together, enabling them to send and receive information or transmit it to a central computer.

Most wireless Lans use radio frequencies to exchange information. But other technologies such as infra-red (a beam of red light) and microwave (high frequency radio waves) can also be used.

Some wireless Lans, such as that offered by Digital Equipment, allow seamless roaming for users with portable computers or organisers.

This is useful in a retail environment, where portable devices are used for stocktaking.

Wireless Lans offer a number of benefits. They can be installed in listed buildings, which are hard to cable. They are flexible, so it is easy to add new personal computers or put extra wireless cash tills on the shop floor during busy periods. Wireless Lans, are also quick to install and can cut costs if PCs or POS (point-of-sale) terminals are moved frequently.

Mr Purdom says the advantages offered by wireless Lans "have given them some success in niche markets, but they haven't yet found a winning horizontal application. Until they do, they will remain a minor product area".

For a minor product area there are plenty of suppliers: about 25 worldwide.

Among them are 3Com, NCR, Norand, Olivetti (which has developed 10 Mbps-a-second wireless extensions for Asynchronous Transfer Mode networks), Telxon, Proxim, Siemens Nixdorf, Symbol, Photonics and Motorola.

Most of the world's leading computer vendors sell wireless Lans, often made by other companies.

The Yankee Group, a US-based research consultancy, believes that the Wireless Lan market will be worth $1,107.2m by 1998, with $725m of this coming from vertical applications, such as retail, medical, warehousing and distribution.

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■ Guest column

Security: a crucial issue

Dean Adams examines the question of security in the client-server environment

There is a widespread perception in the computer industry that the mainframe is 'safer' than the client-server environment. This is a misleading assumption. Both environments suffer, in equal measure, from the biggest threat to an organisation's security – internal attacks on the system. Computers are still operated by humans and humans are still prone to error and, in a few cases, malicious intent.

In short, distributed computing is no more inherently weak than mainframe computing. External threats, though a real problem, are generally responsible for fewer losses than those that are internal to the organisation. In the distributed world, problems arise because distributed systems may be more complex and therefore harder to manage.

The level of security features incorporated in hardware and software productions is dependent on what each individual vendor decides. This causes problems of portability and interoperability for the customer, leading to what amounts to proprietary lock-in.

An organisation which is currently helping to solve these issues is X/Open. An independent and non-commercial body, its membership comprises vendors and users who are intimately involved in the development and piecing together of standards for practical use in the commercial marketplace.

X/Open is developing, with its members, a set of *de facto* security standards for the computing industry. These will aim to set and enforce a new superior level of security capabilities for distributed systems. The standards will be known as the X/Open Security Brands and be to the computing industry what the kitemark is to the consumer industry.

The brand will bring benefits to both vendors and users. Vendors will be able to demonstrate significantly improved security capabilities without incurring the extra costs of undertaking security evaluations. Users will get peace of mind as well as lower costs. Lower costs will result from not having to pay the extra premium for security features as the X/Open brand becomes an industry standard.

Additionally, there will be fewer damaging and costly incidents likely to occur from inadvertent user errors or due to operation by non-skilled staff because safe defaults are enforced by the standards, for system installation, startup and restart.

X/Open is creating detailed standards that can deal with the distributed computing environment. These are in the following areas: secure communications, cryptographic systems, distributed auditing and single sign-on.

Encryption is a necessary supporting technology for secure communications. In the nascent world of electronic commerce, proper encryption will be the deciding factor in its success. However, encryption is a contentious subject: indeed, governments are restricting the import and export of encryption and in some cases, the use of any form of encryption. This may smack of Big Brother, but the thought of criminal organisations being able to carry on their activities completely undetected by law enforcement agencies is a worrying one. However, these issues need to be resolved if business is to be able to take advantage of the enormous opportunities offered by electronic commerce.

Dean Adams: 'Encryption is necessary'

Work is going on to resolve those issues and to define standards that will provide practical solutions for the commercial marketplace. For instance, it may be possible to define an electronic warrant that would enable law enforcement agencies, (subject to due process of law) to obtain access to encrypted information where they suspect wrongdoing.

X/Open is in favour of allowing business to use strong encryption to protect its assets and its communications. However, if provision is not made for law enforcement to continue in a practical manner, the restrictions on import/export and use of cryptography are likely to continue. Therefore, X/Open is examining mechanisms to allow for law enforcement agency access. (having followed the due legal process). Public keys should not be held by anyone accept the owner.

The development of standards for the Public Key cryptographic mechanisms is also high on the agenda. The idea behind this cryptography is ingenious but simple: anyone can encrypt a message but only the receiver can decode the message.

Two keys are created: a private key and a public key. These are created as a pair, by a complex mathematical algorithm. The sender must encrypt its message with the "public" key of the receiver. The receiver decodes the encrypted message with "private" key.

Only the receiver knows the identity of the private key, which is individual to the receiver.

X/Open is developing a Single Sign-On standard, whereby users log on once only. Currently, the practice of dedicating a password for each computer system that a user requires access to results in too many passwords for individuals to remember as they move around departments.

The growing rise of the Internet adds an extra dimension to security within a distributed systems environment. The internet provides very little in the way of support for secure communications, but stronger mechanisms are on the way, and within two years communication will be safer on the Internet.

Firewalls provide much-needed security protection that otherwise would not be available to users of system connected to the Internet. However, even when things become safer, direct access to the Internet should be limited to a few machines on the corporate network, if not just the one.

Forcing all communications to go through a single firewall point-of-entry ensures that these communications have to pass through a stringently and tightly-managed system. Organisations risk, once again, human error to prevail if individuals are obliged to manage their individual firewalls.

Eventually, organisations will come to rely on standards that have been developed in an open forum. In these types of forums, vendors and users try to break the emerging standards. In true Darwinian theory, the standard that remains unbroken gets the X/Open brand. As the distributed systems environment evolves, the resulting changes will be reflected in the standards giving the user peace of mind, giving organisations continuing peace of mind.

□ *The writer, Dean Adams is portability manager for X/Open.*

■ Linking the systems – By Michael Dempsey

A grand, global strategy

Novell, the software company, has an ambitious plan to expand way beyond the horizons of computer networking

Networking computers together is an accepted way of boosting employee performance, but when networks proliferate, or grow from the domestic local area network (Lan) into international corporate communications webs, then management becomes an issue.

Novell is a $2bn company that has been dedicated to networking since 1983. Novell's success has made it the number two software company in the world after Microsoft. The fact that its name is nowhere near as well-known as Microsoft is testimony to the submerged nature of networking software.

Novell claims 50m users worldwide, and is employed in 88 per cent of Fortune 1000 companies. But it is a fair bet that many of those users never give a thought to the identity of their network supplier.

Some companies would be alarmed at this state of affairs, but Novell has come to terms with the fact that most IT users prefer to get on with the task in hand and ignore the technology that enables them to do it. The IT product that gets used is the one that takes up the least time to master. Now Novell has an ambitious plan to expand this principle way beyond the horizons of computer networking.

The Smart Global Network, or SGN, is Novell's grand strategy for linking up an enormous number of potential sites. The key to the SGN is the notion of intelligent devices; any object that contains a microprocessor.

Currently there are 10 microprocessors installed in assorted pieces of domestic and commercial equipment for every one inside a PC. By the end of this decade, that proportion will have become 50 to one. The SGN should exploit the untapped potential of these devices, activating the embedded intelligence in thousands of different pieces of equipment. One simple log-on procedure should suffice for users the world over, using PIN numbers to address their own PC and linked devices.

FT IT

Network Management

As companies become increasingly dependent on networks, the skills to manage them become critical. Here and on the following pages, FT correspondents examine key issues

Novell foresees a world in which individual vending machines will send a message down the line to inform the catering contractor that stock is running low. If the SGN pans out as its authors hope, individuals will be able to send messages from anywhere on the planet.

This network will encompass mobile phones, fax machines and gas meters. For the individual it means getting in touch with home electronics via a mobile phone. For corporates, the SGN could reduce reliance on field staff. Utility companies could read gas and electricity meters from a central location without sending employees to check customer consumption.

Bearing in mind the breadth of its application, Novell believes the SGN could create a global web with 1bn connections. No one company could possibly put such an electronic empire in place and so Novell is relying on a series of mutually beneficial alliances with electronics manufacturers and telecoms providers to spread the SGN gospel.

A software toolkit, Netware Embedded Systems (Nest), has been bought by 75 commercial organisations including fax manufacturers Ricoh and Canon and Andover Controls of the US. Nest costs $50,000 and opens the microprocessors embedded in users' products to the SGN.

Netware Connect Services (NCS) gives PTTs the right to offer SGN services. While licence charges to a PTT might amount to millions of dollars over several years, the potential payback is huge. The national PTTs of Australia, Japan, Germany and France have signed up for NCS, hoping to offer new services at higher tariffs. These premium services will exploit the combination of SGN and fibre optic cabling to deliver better quality data transmission.

When infrastructure investment is included, the cost of implementing SGN could run into tens of billions of dollars. But the move to fibre optic cables is going to take place in any case, so Novell's SGN is hitching a ride on an industry trend.

Novell President and CEO Robert J. Frankenberg: the company claims 50m users worldwide

NCS has also been bought by US communications giant AT&T, and looks like pruning the bills of many large corporates faced with managing international voice and data networks operating over leased lines. By switching to the SGN world and employing NCS, a company could design its own native network and then effectively outsource the management of that network to a PTT. An important technical responsibility would have been offloaded while the corporate user retained whatever features it deemed necessary for its own operations.

The SGN will not wipe out network management as an issue. But it will allow companies to regain control of their data communications assets.

Adrian Holcombe is UK director of network services at Ascom Timeplex, a $300m Swiss-owned maker of networking hardware. Mr Holcombe believes that too many commercial networks are proving unreliable and failing to carry transmissions because the users do not engage in strategic thinking.

"Capacity planning and analysis of traffic levels would allow the IT department to deliver a more reliable service," Mr Holcombe says, "but people are often preoccupied with finding a physical fault and fixing it."

Bay Networks is a $2.2bn US networking hardware and software group that is developing products to operate within the SGN. Steve Jenkins, UK managing director, believes that network management is about to become a lot easier. "Our goal is to take the complexity out of networking," he says. He shares a common opinion that the Internet is too chaotic for business users. "Novell's SGN will be like a professional Internet," he says.

The era of smart devices blipping signals across the globe is still some time off. But by the time Novell hits that one billion connections landmark, the headaches of logging into a system and the perils of keeping commercial traffic running smoothly just might be a thing of the past.

■ PCTVs – By Paul Taylor

PC manufacturers struggle to escape from the bedroom

Most home PC owners keep their machines in the bedroom, the study or a spare room

Home computing has emerged as one of the key trends in the 1990s. Having transformed business and the workplace, "the personal computer is now revolutionising access to information and communications in the home," notes Olivetti, the Italian technology group.

In the US, where computer usage is particularly advanced, 35 per cent of homes own a PC and 16 per cent of households with a multimedia PC have bought a second machine for their children.

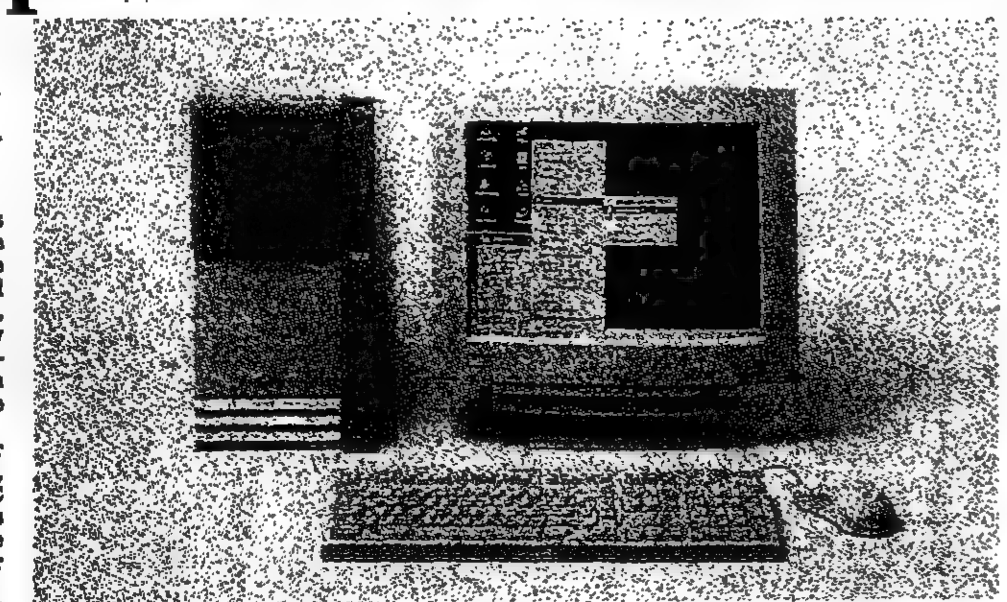
In Europe, spending on PCs overtook television spending in the UK and Germany in 1994. Sales of Multimedia PCs this year are expected to account for almost half of overall home PC sales.

But despite the success of multimedia personal computers designed for home use over the past 18 months, PC manufacturers have still found it difficult to move their products out of the bedroom or study and into the living room. In Britain, a survey prepared for Packard Bell last summer confirmed that while the home computer is part of family life for about a fifth of UK households, it is usually kept apart from the TV, stereo and other home entertainment equipment.

Most home PC owners keep their machines in the bedroom (22 per cent), the study (20 per cent) or a spare room (17 per cent). Only 15 per cent keep their computer in the living room which despite the supposed convergence of consumer electronics and computing, remains the domain of the television set and stereo system. Surveys elsewhere paint a similar picture.

In an effort to overcome this segregation and build a broader base for their machines, some manufacturers have focused on building home PCs which combine most if not all the features of multimedia PC, television and hi-fi system.

Several approaches have been tried. The most popular, adopted by companies such as Compaq, Packard Bell and Apple Computer, has been to build multimedia machines complete with CD-Rom drives, stereo sound cards and television tuner cards capable of receiving and displaying television pictures on a standard PC monitor.



Siemens Nixdorf's new Scenic Multimedia models have high performance components and feature integral TV and audio capabilities as standard. Manufacturers of integrated PCTVs report steady sales for their machines, even though the typical viewing habits associated with TV and PC are markedly different

Another approach, favoured by companies such as Germany's Siemens Nixdorf, Britain's ICL and Compaq with its new Presario 5220 has been to build integrated or all-in-one PCTVs. Most of these machines can display a television picture or teletext page either full screen, or in a windows-style box.

Manufacturers of integrated PCTVs report steady sales for their machines, even though the typical viewing habits of TV and PC are markedly different – a PC is usually used by a solitary individual sitting close to the screen while a television set is often watched as part of a social gathering and at a distance. As a consequence, most analysts and retailers believe these hybrids have limited appeal confined to niche markets such as the student sector.

"Sales of computers that can also be used to view television and teletext are failing to live up to industry expectations," says Time Computer Systems, one of Britain's biggest direct sales retailers.

"The market is not ready for mass volume PCTV sales," says Colin Silcock, sales manager at Time. The company, which had been selling an extensive range of PCTVs, has withdrawn the systems and replaced them with standard multimedia PCs and optional plug-in TV cards.

Nevertheless, in an effort to overcome consumer resistance, Olivetti launched a different kind of PCTV last autumn. Olivetti's innovative Envision machine is black, stylish and looks more like a video cassette recorder or a stackable stereo component than a powerful PC. Envision has built-in loudspeakers but it can also be plugged into a hi-fi system for better sound and connects with a TV set and VCR using standard "Scart" connectors.

Envision attempts to overcome one of the main criticisms of previous attempts to combine PC and television functionality – the inability of a standard television screen to match the high-definition image available from a dedicated PC monitor – by building in a device that eliminates the flicker and permits an acceptable quality of text.

Olivetti's machine is supplied with a remote control and a wireless infra-red keyboard with built-in trackball to provide the functions of a mouse device. Inside, Envision is still basically a traditional PC with an Intel 486 or Pentium 75 microprocessor, 8MB of memory, floppy and hard drives, and a CD-Rom which, in the top-of-the-range model, can also play the new digital Video CDs. In future, Envision will also operate as a set-top box, converting the digital signals of satellite video-on-demand services into analogue television output.

Apple Computer has developed a similar device called Pippin – a home electronics machine which delivers its sound and vision through a television, contains a Microprocessor, 6Mb of Ram and a CD-Rom drive. It adds a games controller but lacks a keyboard, a mouse or local storage and uses the television for display.

Pippin has, however, met with a mixed response. Industry analysts such as Forrester Research argue that Pippin, like other similar devices, "is in no man's land, more expensive than a games machine, less capable than a PC. Consumers who can afford a computer will buy one, the rest won't spend $600 on a machine that can't do word processing." At £1,400 in the UK, Envision is several times more expensive.

Some analysts believe first generation machines such as Envision and Pippin could suffer the same fate of other consumer multifunction devices, such as Commodore's CDTV and Philips's CD-i players. However, they were disappointing partly because of lack of software. In contrast, both Envision and Pippin run established operating systems – guaranteeing that far more software is available.

Nevertheless, they may still be ahead of their time. The multimedia home PC platform is still evolving as technology advances and new standards emerge. In contrast, most successful consumer electronics products, such as audio CD players, have been based on stable commodity-like technology that can be mass produced at low cost.

For that reason, most PC manufacturers assume it will be some time before the home PC ousts the TV from pride of place in the living room.

■ **Videoconferencing** – By Geoffrey Wheelwright

Kingpins focus on a standard

Intel and Microsoft announced plans to work with AT&T, PictureTel and other industry leaders

Videoconferencing is no longer just the plaything of huge corporations with dedicated satellite links – or corporate chiefs with big egos.

It is enjoying widespread use and is even popular enough to be offered as an add-on service to existing personal computer systems.

Consider, for example, the recent joint development work done by leading videoconferencing system developer PictureTel Corporation and personal computer market leader, Compaq Computer – which announced late last year the creation of an add-on desktop video conferencing system for computers using the Microsoft Windows 95 operating system.

Known as the PictureTel Live PCS 200, it is based on the popular H.320 videoconference standard, and is PictureTel's first product designed for use on personal computers running Windows 95. Its distribution in the US started in late November and it has a suggested US list price of $1,995. The company has pledged to make the PCS 200 available outside the US in the first half of this year. The PCS 200 operates over basic rate interface ISDN digital telephone lines and is interoperable with all other PictureTel desktop and group videoconferencing systems, as well as standards-based systems from other manufacturers.

The unique thing about it, however, is that PictureTel and Compaq designed it together for Windows 95 – an unusual collaboration between PC and videoconferencing companies. PictureTel is also including its LiveShare Plus data conferencing software – to enable remote users to share computer applications, transfer files and use a whiteboard and common clipboard - as part of the package.

Meanwhile, the two kingpins of the PC design business announced in January that they would focus on helping to standardise PC-based videoconferencing technology. Intel and Microsoft announced plans to work with AT&T, PictureTel and other industry leaders to achieve interoperable, standards-compliant parameters for conferencing on the PC. The two companies say this work is intended to help ensure that conferencing-enabled PCs can connect to each other and with multipoint services using industry-standard multipoint control units (MCUs), providing the same kind of simple connections people experience with the telephone today.

This standardisation will be around T.120, the International Telecommunications Union (ITU) standard for data conferencing, which was ratified in 1995. The companies say T.120 implementations are being designed by leading conferencing vendors for inclusion in their products.

Intel and Microsoft, in co-operation with the International Multimedia Teleconferencing Consortium, (IMTC), intends to host a series of interoperability events throughout this year to test and resolve interoperability issues between desktop conferencing products, multipoint services, and application providers. The first event, scheduled for March 25-27 in Santa Clara, California, will test vendors' T.120 implementations to ensure interoperability across a wide range of products. Some 250 companies have been invited to the event, including all members of the IMTC.

"Microsoft supports T.120 and intends to work with the industry to achieve interoperable T.120 solutions. We intend to provide a base level connection for widespread conferencing applications by multiple vendors," said John Ludwig, vice-president, personal systems division at Microsoft . "The ability to collaborate and share applications will significantly enhance the productivity of users of the Windows 95 operating system."

> The new British Telecom centre in Suffolk brings together 230 specialists

It is not only American companies that are doing leading-edge work in videoconferencing. British Telecom, for example, last year established what it calls the Centre for Human Communications at BT Laboratories (BTL), Martlesham Heath in Suffolk.

According to Dr Richard Nicol, who heads the new centre, its work goes beyond just the specific design of something such as a videoconferencing system. "BT has long recognised the importance of bending technology to suit people rather than the other way round," he says. "Our aim is to ensure that people get the best from BT's technology and that BT in turn has the best technology to offer. We have created a power-house that is unique in the world. We will focus on the challenge and opportunities presented by convergence between video and voice systems, between television and telephony, and between information and communications."

The centre, part of BTL's Advanced Applications and Technologies unit, brings together 230 people working on video telephony, videoconferencing, video and speech coding, face recognition, speech and speaker recognition, text-to-speech conversion, network-based call answering, interactive speech services, remote presence, 3-d video telephones, multimedia databases, virtual reality, human factors consultancy (including user and task analysis), usability valuation, user-centred design and the "psychology of telecommunications".

Collaboration: PictureTel, a world leader in the videoconferencing industry, is doing joint research work with Compaq, the PC market leader. Pictured here is PictureTel's Concorde 4500 system

For those who do not want to wait for the results of all this research and development work – or only need videoconferencing facilities once in a while – service bureaux are starting to offer videoconferencing as part of their range of business services – along with courier services, photocopying, faxing and desktop publishing. In the US, for example, some branches of the popular Kinkos office service outlets are now providing a videoconferencing service.

Kinkos provides for both "Point-to-Point" conferences with one other site, or a "multipoint" conferences with as many as seven different sites at once. The company says that during a multipoint conference, the site which is speaking is the one that everyone else sees and hears. If another site has a question or comment, the picture and sound are apparently designed to automatically switch so that everyone sees that location.

■ **Network services**

Doubts over links between electronic trading networks

Message formats can change in small but significant ways as they pass between networks, writes John Kavanagh

Network services and their big customers are going through mixed feelings about how easily companies should be able to send business transactions from one network to another.

The issue is a big one for organisations seeking to gain the administrative savings and just-in-time ordering benefits of electronic data interchange. EDI is the exchange of routine business documents, such as orders and invoices, between trading partners' computers with little or no human involvement.

In most European countries there are at least two organisations offering EDI network services: typically, the national telecoms monopoly and a couple of US international services. In the UK, the most open telecoms market, there are half-a-dozen, plus others selling services based on them.

Network services receive transactions from customers and direct them to the right destinations. EDI users thus avoid the need for separate links to every electronic trading partner: they have just a single connection to a commercial service.

Network companies initially kept their services separate. This meant a company trading electronically with customers which used different networks had to have a connection to each one. Then, in the early 1990s, after much public acrimony the main services in the UK agreed to provide links between their networks.

A study by the UK Network Liaison Group, made up of network companies and user bodies, shows that the links are free of charge, have technical support 24 hours a day and that business transactions are delivered from one network to another immediately in almost all cases and always within 15 minutes.

Even so, there are mixed views on the efficacy of the links – and on whether they are being actively promoted by either the services companies or big users.

The Network Liaison Group says the links between the network services have a big role to play in expanding electronic trading, to the benefit of business in general – but describes the current link facilities as "technically fairly basic".

The problem is that several different linking methods are used, so message formats can change in small but significant ways as they pass between networks.

The Network Liaison Group points for example to the fact that although audit trails are provided from end to end the audit information is not always presented in a service supplier's usual format. This can inconvenience its customers.

A more serious concern is that of differences in address formats between networks. In addition, some data fields can be used for different purposes on different networks or have different formats. For example, the data field which identifies the message type can be slightly different, so a receiving network might not recognise an incoming message as an order.

"When this happens, messages cannot be sorted into the different types but are just passed as a mixed dump to the user," says David Kalu, EDI specialist at user and industry body, the Article Number Association. "Big users, in particular, find it useful to get their mail sorted."

John Pennell, founder of EDI specialist Meadowhouse Bar-Laser, says users can get round some of these issues by special programming of their EDI software packages – but he adds that this can be "a massive problem" for big mainframe computer users with many electronic trading partners scattered across several networks.

David Kalu at the Article Number Association agrees. "This is one reason why some big companies say their suppliers must connect via a specific network," he says, adding, half-jokingly, "I wouldn't be surprised if network companies introduced services such as message sorting to discourage users from linking to rival networks and using the interconnections."

John Thorpe of GE Information Services: 'Our emphasis is on delivering business productivity'

The European Electronic Messaging Association is scornful about the service suppliers' whole approach.

"We've surveyed network services across Europe and found little or no interconnection," says executive director, Roger Dean. "The UK is slightly better but the links here are still mainly proprietary. In Europe, services link using the X.400 messaging standard but they don't offer the X.435 EDI extension. This is all because suppliers want to hold their market share."

John Thorpe, managing director of network company GE Information Services, agrees that interconnection in Europe is patchy: indeed, where links between international services exist they are made in the UK or the US, so traffic between users in France or Germany might first travel across the Channel or even the Atlantic.

Mr Thorpe also sees a need to sort out the issues of inconsistent address formats and end-to-end auditing. But he says the days when the main suppliers in the UK jealously prevented their customers from communicating between networks are over.

"The market has come to realise that interconnection is good not only for users but also for suppliers, because it enlarges the whole market," he says.

"Transmission has become a commodity service: our emphasis now is on delivering business productivity. The real obstacle to electronic commerce is the difficulty of changing business processes, both inside a company and between companies, to take full advantage of EDI."

■ Keeping the network running – By Nuala Moran

A range of strategies and options

Outsourcing of services should be an explicit part of the IT strategy, not a substitute for it, says new research based on the experience of 600 user companies worldwide

Rather than dreading outsourcing as the loss of empire and status, IT managers are now assessing the contribution it can make to their operations in the same way as they might judge a new piece of hardware or an improved networking technology.

"Outsourcing is no longer something that is done to the IT manager by the finance director," says Dr Ian Dewis, principal of CSC Index, who has just concluded a study of attitudes to, and experiences of, outsourcing among the IT directors and managers of 600 companies worldwide, including 200 leading US corporations.

"Outsourcing has gained respectability. There is a growing awareness that you can not do everything in-house, and that outsourcing must be considered as part of the IT strategy," says Dr Dewis.

In fact, outsourcing has become a misnomer, he says. "It is now as much to do with bringing in activities and assets as outsourcing them."

Kodak outsourced important components of its computer systems in 1989 and this was a watershed event in the development of a robust and thriving outsourcing services industry. Six years later, the US market exceeds $10bn and is growing at 16 per cent a year, while the European market is growing by 20 per cent a year. Dr Dewis said South Africa and Australasia were poised to join the outsourcing rush, taking advantage of the experiences of US and European companies.

FT IT

Outsourcing IT services

An option allowing user-companies to focus on core competences while improving their IT operations

In *New Perspectives in IT Outsourcing*, Dr Dewis draws on interviews with 600 IT executives to demonstrate how to structure and implement successful outsourcing relationships. Among the deals he has studied are Kodak's with IBM, Digital and Businessland; British Petroleum's with Sema, Science Applications International Corporation, and Syncordia; Pacific Bell Telephone's with Arthur Andersen; and Delta Airlines' with AT&T GIS (which has now reverted to its former name, NCR).

The research was carried out at the request of the 600 companies, which are all members of the CSC Index Foundation, the independent research arm of Computer Sciences Corporation, one of the leading outsourcing companies.

According to Dr Dewis there are four categories of outsourcing. The first two – total outsourcing and selective outsourcing – are well established, while transitional outsourcing – where ageing systems are outsourced to focus attention on the creation of a new system – and transformational outsourcing – where the outsourcing company builds and runs the new applications – are just emerging. All four types are growing steadily in Europe and North America, and are showing signs of developing in the rest of the world.

The motivation for outsourcing is changing from an initial focus on reducing costs and improving service levels. Now companies cite a variety of reasons: a desire to concentrate on core competences; as a means of achieving change; to fix information systems or processes that are perceived as "broken" (a surprisingly high number of organisations are opting for outsourcing for this reason); to provide an infusion of financial resources.

"Several companies have recently outsourced IT to cash in on the value of their older assets in order to secure funding for new ones," said Dr Dewis.

As experience of outsourcing accumulates, and the market matures, perceptions of it are changing, too. Until recently, most IT staff thought of outsourcing primarily as the kiss of death," said Dr Dewis. "Now the tables are turning and staff welcome being part of an outsourcing deal."

In the past, many IT managers believed that outsourcing amounted to giving away the strategic assets of the company. Today it is seen as an effective option for dealing with many of the pressing problems facing the IT department, such as breaking free of the shackles of legacy systems and people.

However, warns Dr Dewis, outsourcing must not be viewed as the panacea for all inadequacies.

As the market matures, the nature of the outsourcing contract is changing from a simple agreement to buy certain services. For example, British Gas and Amdahl recently set up a joint venture to develop and run the utility's billing system, and sell the service to other companies; Delta Airlines hived off its IT operations into TransQuest Information Solutions, a 50-50 joint venture with AT&T GIS (now NCR), which will provide services to Delta and sell the same services to other airlines; and Swiss Bank acquired a stake in Perot Systems as part of an outsourcing deal, with the objective of selling outsourcing services to other financial services companies. "The range of potential motives for IT outsourcing makes it ever more critical for a company to identify why it is outsourcing. The factors that determine success will be vastly different depending on the strategic intent," said Dr Dewis. His research has identified three kinds of strategic intent for IT: improving the operation of the IT department; extending the impact of IT on the business; and the desire for commercial exploitation of IT resources and industry knowledge. "Failure in outsourcing can often be attributed to a mismatch between the strategic intent of the client and the corresponding motivation of the vendor," said Dr Dewis.

In several problem relationships he studied, the motive was increased impact or commercial exploitation but the customer structured the contract around improving IT operations.

"Our research shows how the purpose and nature of IT outsourcing are changing, and illustrates just how varied the strategies and options have become," Dr Dewis concludes. "There is no longer a 'one-size-fits-all' approach to IT outsourcing."

The remote systems management centre at Siemens Nixdorf, Bracknell: providing pro-active support for all elements of companies' network information systems – see also report on helpdesks, pages 18-21

■ Recruitment – By John Kavanagh

Fresh approaches are emerging

Once people have joined, motivation rather than pay is the main factor that makes them stay, employers and recruitment agencies say

Desperate shortages of skills are forcing companies into new approaches to recruiting, training and motivating computer staff as systems projects are re-started after the recession.

IT staffing is a special case, because IT people have always tended to see their careers being in IT rather than with a particular employer. The latest annual *IT Skills Trends Report*, published by the Institute of Data Processing Management, shows that 53 per cent of computer staff expect their next job move to be to a new employer – and 44 per cent expect to move within 12 months.

Philip Virgo, the report's researcher, suggests focusing recruitment effort on people whose personal circumstances are likely to make them stay.

"Those whose health or disability problems of their own or in members of their family are taken into consideration can display well above average loyalty," he says.

Local people with mortgages and children at school, especially mothers returning to work, are worth targeting, Mr Virgo says. Local graduates who have lived at home and gone to the nearest university might also prefer a local company. His point here is that it is not necessarily best to focus simply on people with the skills immediately in demand – or on young whizz-kids.

Problem of age discrimination

Age discrimination is an issue in an industry in which many IT teams regard people over 35 as "past it". Yet the Institute of Employment Consultants says that more than 25 per cent of companies would fill vacancies twice as quickly if they did not specify age limits, and a further 57 per cent would fill jobs 50 per cent earlier.

Gary Ashworth, the institute's president who is also managing director of Abacus Recruitment, says age discrimination just keeps the problem going, because teams get younger and employers then say that an older person will not fit in.

"People complain about skills shortages but they create the shortages statistics themselves if they specify an upper age limit, because they're aiming at a much smaller pool of people," Mr Ashworth says.

Once people have joined, motivation rather than pay is the main factor that makes them stay, employers and recruitment agencies say. Contractor rates might be growing at between seven and 11 per cent a year but employers are holding down pay rises for permanent staff.

"In the more inflationary 1980s it was felt that you had to pay certain rates to get IT staff, but employers now regard IT as no different to other activities and are looking at all costs very hard," says Colin Osborn, associate director for personnel at IT services group CMG.

Tony Reeves, chief executive of IT recruitment group Delphi, agrees and says motivation is now the big issue – especially for companies which still insist on going for younger staff.

"Younger people, in particular, want to keep pace with technology – and if necessary they'll do it by moving on," he says. Mr Reeves points to training as all-important here, a view supported by a survey of 1,100 members of white-collar union MSF. Almost 90 per cent said training increased their motivation, including 52 per cent who said it had a great effect. More than 95 per cent said it improved their job satisfaction.

IT managers have heard all this before and point to the risk of losing young people in particular once they have invested in giving them training and experience.

But a complete rethink is needed here, according to some in the industry.

"Companies have traditionally been unwilling to train because of fears that their staff will then go to another employer," says Dave Bevan, a manager at IT recruitment company, Hunterskil. "However, these days many people are leaving to become contractors instead. The biggest source of new skills is now first-time contractors.

"This shift is in line with trends towards flexible working, fixed-term permanent contracts, contracting work out and so on. So, if IT departments are looking at flexibility, they must expect the same from staff and see that it is in their own interests to give training. The staff might still leave but the employers are developing a pool of people for the whole market – people who will very likely end up bringing their training and knowledge of a company's systems back to that company as contractors."

Philip Virgo, author of the *IT Skills Trends Report*, has an equally radical proposal: employers in an area could get together to develop or commission IT training which is relevant to all of them. This would ensure that training closely matched local needs and costs would be shared while a pool would be created of trained people who might at least stay in the area and move between the sponsoring companies.

Trends among staff to become contractors and among employers to contract work out leads Mr Virgo to highlight a need for skills audits to identify skills which are needed among permanent staff and tasks that can be farmed out. Training, motivation and career development can then be directed accurately at the key staff who must be retained.

Leeds Permanent Building Society developed skills audits down to a fine art and won a British Computer Society award in 1994. It introduced the society's Professional Development Scheme, which plans and monitors individuals' training and experience, and linked it to the personnel system. The results included better planning of training and recruitment to meet needs, a £100,000 saving from better organisation of training to take advantage of block bookings, and higher staff morale – even though career movement was static.

The staff were motivated by the fact that the organisation was clearly committed to their development.

These and other proposals are still generally in their infancy, but there is a need for urgency. "Employers adopting new approaches are still in a minority," says Dave Bevan at Hunterskil. "But these attitudes must become prevalent or the jobs market will die."

David Bevan of Hunterskil Howard: 'Many trained people are leaving companies to become contractors'

FT-IT Recruitment

Senior positions in the converging worlds of information technology and finance appear in the FT's weekly IT Recruitment section, published in UK editions each Wednesday and international editions each Friday. Also available on the World Wide Web at www.FT.com

■ £75m outsourcing deal – report by Michael Dempsey

Origin enters premier league

A $1.2bn company employing 10,000 people in 27 countries has joined the top league of outsourcing contractors

Origin, the new designation for outsourcing operations by Philips, the Dutch electronics giant, has celebrated its formal arrival in this fiercely competitive marketplace by announcing a £75m deal with Imperial Chemical Industries. This five-year contract will see Origin running computer systems that formerly came under the international chemicals group's telecommunications and services group.

The principle of hiving-off IT operations on fixed-price contracts is now established practice among corporates. And the scale of these contracts has drawn the biggest IT players into rigorous bidding.

While the scale of the ICI deal and the endorsement of an international blue chip client are important to Origin, its executives cannot conceal their delight at beating off a string of impressive rivals.

EDS and CSC, the two leading US outsourcing companies players, bid for the ICI deal. So did French Sema and ICI's own in-house IT department.

Peter Overakker, a senior manager at Origin, describes the selection process as "an open discussion". Since Mr Overakker's three years at Philips was preceded by a decade working for EDS, it is fair to assume he knows the bidding tactics of large IT companies inside out.

He says that "honesty proved the best policy" with ICI – "we told them the things we didn't like. You have to be very careful when you take over mainframe computers, the outsourcing contractor must be free to change things".

Large mainframe computers are expensive to maintain, and their significance in a world of powerful desktop PCs remains controversial. Origin will keep one IBM mainframe running at an ICI site in northern England, but a Rotterdam site will migrate towards smaller systems. Overakker's insistence on flexibility seems to have struck a chord with ICI – "Philips and ICI have similarities in that they're both re-organising their operations".

Mr Overakker is frank about the attractions of ICI as a client. The 399 staff it has inherited include a strong core of competence in a German manufacturing software suite that is currently in vogue across the IT sector. SAP has an immensely successful series of programs that have also found favour in the chemicals industry – "since so many projects use SAP, we are always glad to acquire more people who know it," says Overakker.

BSO, a Dutch software house, 41 per cent owned by Philips, is one of the components of Origin and another home to SAP expertise. So both parties stand to gain by a pooling of specialist knowledge that is in demand across Europe.

A recent flurry of aggressive bidding has seen large outsourcing contracts changing hands. This, in turn, has provoked suggestions that some large companies are prepared to enter extremely low bids in order to win pivotal deals that will raise their profile.

Mr Overakker rejects any suggestion that Origin will enter into this game: "Forget it," he says, and points out that Origin "has come into existence with a formidable client list, and does not need to engage in loss-leading deals in order to impress".

A clear note of pride is evident as the former EDS executive lists his new company's achievements: "We've even taken a contract from right under the nose of EDS in Dallas."

Origin runs a data centre on behalf of McDermott, the energy company, under a $20m-a-year contract. The centre is located in EDS' home town of Dallas. From his Eindhoven office, Mr Overakker is emphatic that Origin "has something new to offer as a truly European player. I think we are a good European alternative to other contractors".

Outsourcing is often feared by incumbent IT staff, who perceive it as a thinly-veiled exercise in cost-cutting and job reductions. Mr Overakker claims Origin will steer well clear of this kind of practice, keeping the workforce on-side in the interests of the customer.

Grundig, the German consumer electronics company, and Daf, the Dutch truck-maker, have also recruited Origin to run their IT operations this year.

ICI is covering its bets with the move towards outsourcing. Richard Sykes, the group IT manager, reports directly to the ICI group finance director. A scientist by training, Mr Sykes describes his career with ICI as "20 years of business management". He points out that while Origin has gained control of the historically important Runcorn computer centre, ICI itself retains control of future computing strategy.

"The £75m contract does not extend to ICI's actual IT budget. At ICI, we don't regard the provision of IT as a core competency – others can do that better. But the development of an IT strategy and the method of delivering that strategy is a key competency," he says.

The international corporate IT weight of ICI is spread across several outsourcing contractors. When ICI demerged its Zeneca pharmaceuticals and agrochemical unit in 1993, the company needed to split the voice and data telecoms network that serviced both operations. It would have cost £5m to do this in-house. Racal Network Services was awarded a £15m three-year contract to handle ICI's telecoms. But Racal paid £3m for the network assets. Added to the potential spend on dividing this up internally, ICI effectively saved £8m. Meanwhile, ICI Paints has outsourced to CSC in western Europe in a £30m deal. In North America, ICI Films employs EDS.

Half a dozen ICI personnel from the Runcorn site will remain on the company payroll to oversee the crucial Service Level Contract: an SLC, stipulating precisely what the customer expects, is vital to any outsourcing deal – not that Mr Sykes expects problems.

He has fulfilled his objectives of preventing redundancies and managing change within the IT world.

Hot spots: helpdesks and support centres

More help to keep the show on the road

Time spent at the helpdesk front-line is now recognised as an ideal grounding in both information technology and the core business in which it is used. The helpdesk and IT service centre is something that business managers should care about, discovers Claire Gooding

FT IT

Software at work

Here, and on the following two pages, FT writers examine the role of the helpdesk

As businesses become more reliant on PCs, the need for technical support is vital. Sainsbury's uses ServiceCentre from Peregrine Systems to manage its helpdesk. Report, Page 20

The helpdesk has suddenly become the hot place to be. Forget the drab, untidy corner where "support" staff were once consigned to a despised limbo – the modern helpdesk is a lively hub, buzzing with activity, staffed by valiant heroes whose expertise helps keep the show on the road.

In some places – for example, outsourced support organisations for whom the helpdesk is a "bread-and-butter" function – the support centre has a fevered atmosphere similar to a telephone-sales room, with targets, queued calls and the "resolution count" of solved problems on display for all to see.

As businesses become more reliant on PCs, the need for technical support is vital. However, as machines and systems become more complex, the harder they are to use, says Duncan Brown of the market analyst company Ovum, and author of the *Ovum Evaluates* report on helpdesk tools.

"The main issue is the technology paradox: the fact that technology – supposed to make our lives easier – actually becomes more complex, and the users become flummoxed when they fail," says Mr Brown who is not convinced by the argument that users are becoming increasingly sophisticated about complex systems. "We repeatedly see the results of making technology available to non-technical users, especially where IT is a part of the job – but not the core."

The customer could be internal or external. The helpdesk devised for internal users of information technology with computer problems has provided a highly adaptable model for the "customer-service desk".

Utilities and other large companies have been quick to adapt the idea of problem-tracking, using a database of solutions. There are an increasing number of helpdesk tools that deal with both IT and customer-service areas.

"We tend not to make a distinction between the applications, although some solutions on the market may address one area more than another: some, such as Vantive, sell to both," adds Mr Brown.

His report estimates global revenues for this corner of the software industry to be about $280m in 1995, growing to $813m by the year 2000: "As a good indicator of the level of growth, most of the companies we looked at were growing at 100 per cent annually in 1994 and 1995."

Helpdesk tools in both markets have taken advantage of IT developments such as computer-telephony integration (CTI), open systems, client-server, and even artificial intelligence (AI).

There are 170 different solutions sold for small and large users; some are off-the-shelf solutions, others modular and highly customisable. There is great variety, too, from call-logging and call-management tools to knowledge-based tools which use AI or neural networking.

Open systems and client-server technology have affected both the environment in which users need help (and more of it, in a distributed environment), and the helpdesk tools themselves.

Increasingly, they use Windows front-ends, and are able to operate in a mixed environment.

The key is to have a single source of contact, with all problems channelled through one point, according to Carter Lusher, a Gartner Group analyst and expert on helpdesks: "That doesn't mean that there is one big call centre – it could be multiple-tier helpdesks, but the user has only one help number to call.

"It's important to have one point of contact with distributed computing. With client-server systems, end-users might have Unix/Motif, Mac or PC, and having one point of contact puts the responsibility for determining the cause of the problem in one place, in the helpdesk, where it's their job."

Answering a broad range of queries puts pressure on expertise and skills. Some organisations keep a sense of excitement and urgency at the internal IT support desk by passing on specialist questions – on, for example, iron mainframe computer performance – to remote experts "on tap".

The US electricity supplier, Entergy *(see report, right)* demands an answer within three minutes from the front-line staff in its "command theatre", otherwise the problem is escalated to the next level. Swift and courteous service to PC users is vital, when so many non-IT experts end up relying on their PCs for everyday tasks.

"Good 'people' skills and good telephone skills come before technical skills – it's a public relations role, because the people calling are often angry or frustrated, so trouble-shooting skills are important," says Mr Lusher.

Computer skills and people skills have not always gone hand-in-hand, however. Time spent at the helpdesk front-line is now recognised as an ideal grounding in both IT, and the core business in which it is used: coding is no longer the only skill that matters in IT.

Training and support were sometimes considered to be jobs for second-raters, but in fact provide two-way education for IT workers. Teamwork and good communication skills count almost as much as IT skills, especially in customer-service. For people – and software suppliers – with the right skills, there are tremendous opportunities in specific market niches, including customer service, outsourcing, and training. The Helpdesk User Group (HUG), a central forum for everyone in the business, is setting up a sister organisation specifically for insurance and healthcare helpdesks. The group has nearly 6,000 member-companies worldwide, covering 20 countries, 13 of them in Europe.

"The number of 'fix it' calls are on the decline as people get higher quality products, but there is an increase in what I call 'Just-in-time consulting'," says Malcolm Fry, an independent consultant on customer-service support, who is on the advisory board to the international Help Desk Institute, HUG's US counterpart.

"End-users now have access to end-user tools such as PowerBuilder, so now the typical enquiry is: 'I've written 15 lines of code and it's not working'.

"With Web usage spreading, there's a shift in the tools requirement: you need desktop imaging and the ability to work two machines together as one, 'walking through' the program."

Such tools may help to bring down the total cost of IT, 80 per cent of which clocks up after installation, according to Bill Kirwin, Gartner Group's vice-president and developer of the widely-used model for the total cost of IT ownership.

"Every dollar a company saves on formal support costs around $1.50 in hidden costs, because the support effort just gets pushed down the line to people who are paid to do something else," he says. "We call that underground support."

Carter Lusher: 'It's important to have one point of contact with distributed computing'

Electricity industry application

Service with a smile

The helpdesk can be a good place to get to grips with the way a company operates, writes Claire Gooding

At Entergy, IT support is far from being a dead-end job. Philip Orton is back at his desk at 7pm, while everybody else is celebrating with a fellow member of staff who is retiring after 44 years in the company. Mr Orton is director of computer operations at New Orleans-based electricity supplier Entergy.

"If you object to being on call, you don't belong in a job like this," he says. Charming on the telephone, relaxed, and remarkably tolerant of being bombarded with questions, it becomes obvious why he in in charge of a "command theatre" (no humble "helpdesk" here) which has become a sought-after career step for IT staff in Entergy.

"If you go back three years, you begin to see dramatic shifts in the way helpdesks were deployed," he explains. "Services radiated out from a central mainframe, and that began to change, because of the huge uptake of personal computing and the PC, the change in the telecoms network architecture, the different communications protocols, configuration, management and the piecing together of systems supporting different devices.

"The way the applications were being built also started to change along with distribution throughout company. The groups then became inter-dependent as well, because the environment couldn't stand on its own – the help had to be integrated in the same way that the services had become so."

Entergy looked at varying levels of consolidation and discovered that the number of disciplines and functional groups were growing to support the way applications were delivered. "The functions were growing and changing, in the way that a helpdesk activity got involved: it was a matter of what you need when you need it – check and adjust all the time – people technology, staff levels, whatever needed adjustment."

The company looked at the consolidation of 15 helpdesks, with the help of the "Ultimate Helpdesk", a committee of 12 people who represented all the different business units and helpdesks. They did a requirements specification, scanned the industry and examined several solutions including Infoman and KBMS.

Continued on facing page

Entergy's well-equipped 'Command Theatre' helpdesk has become a sought-after career step for the company's IT staff

London Electricity's helpdesk: Total Gas Marketing is using LE to service the response to an advertising campaign

■ Bureau service – By Claire Gooding

Customer services shake-up sparked electricity sideline

Helpdesks need not stick to just one area of expertise: London Electricity is helping to sell gas

As a sideline to electricity, London Electricity now sells helpdesk services. Its centralised customer-service centre proved such a success that it set up a bureau service, and now its first client, Total Gas Marketing, is using LE to service the response to an advertising campaign.

Jon Gritten, business development manager at London Electricity, plans to sell expertise and customer services, such as call centre services, from the regional electricity company's customer operations centre, set up in Bexley Heath early in 1995.

Previously, LE's own customers had experienced problems: "We weren't giving a consistent quality of service – it depended on which one of our five different call centres the customer rang, and who they got on the phone. So we amalgamated the five centres," explains Mr Gritten.

This meant there was a clear brief when LE started looking for helpdesk software. "Whatever the electricity issue was, they could ring one number and the person would respond quickly, and secondly would be able to resolve the difficulty. Whatever the issue was, the aim was to reply in one call."

The speed of amalgamation, over a six-week period, cut down the number of potential suppliers. LE looked at five vendors supplying packages that dealt mostly with internal customers, and chose US company Inference, from Novato Ca, whose CBR2 product uses "case-based reasoning" to store and retrieve information for IT helpdesks and customer-care call centres.

It is expanding rapidly worldwide, and has a UK operation based in Slough.

"Inference's response was the most impressive and responsive, and they offered us precisely what we wanted at the right price, within the six-week deadline," recalls Mr Gritten. "The account manager gave us excellent support, giving us all sorts of support in the early days."

London Electricity uses a mix of PCs, with the customer information held on an Amdahl mainframe. The purpose-built centre with its new technology required an exacting training programme – which last year won an award for excellence in training.

"It is very comprehensive – every operator receives five weeks' training before starting, with an update and assessment every eight weeks using video and other techniques," says Mr Gritten. "The objective is to make sure that every single operator gives a constantly high level of service. It is all centred to giving the customers the correct answer rather than keeping them hanging on, or passing them on to someone else."

LE now receives 37,000 calls weekly, whereas the five call centres used to receive 50,000 calls weekly.

"We deduced we were giving a much better level of service in answering the query first time around," says Mr Gritten. "From one centre, we are able to answer the query and give them the correct information. We do independent customer satisfaction surveys, and the most recent one six months ago – by NOP – gave us a 91 per cent level of satisfaction with the call-centre centre. We're striving to increase that still further."

Graeme Boyd, Total Gas Marketing's sales and marketing manager, willingly recommends the service. "We understand that this was the first time that London Electricity has used the Customer Inquiry Centre for an external organisation. We were pleased with the speed of response and the comprehensive IT and telecoms approach LE was able to provide."

■ Retail automation: application report – By George Black

A helpdesk for Europe

New software will enable problems to 'follow the sun' from one region to another so they can be worked on around the clock

BP Oil, part of the UK's largest company British Petroleum, is introducing a helpdesk across Europe, based on software from Intercom Data Systems (IDS).

The scheme has started in Germany, where it will support point-of-sale and back office systems being installed at 1,300 petrol stations. It is in Germany that BP's long-running Europe-wide Retail Automation Project (RAP) is furthest advanced.

The petrol station systems and the helpdesk are also now being adopted in the UK, with France, the Netherlands and other European countries likely to do the same soon. Wherever the RAP is rolled out, it is intended that the IDS helpdesk will follow.

Until three years ago, many of BP's retail systems problems were tackled with fairly cumbersome paper procedures. To alleviate this, the company considered developing its own helpdesk system, but decided against it because it would have been too expensive.

The IDS product was chosen mainly because it was rated as more flexible than the alternatives. Mark Waite, a technical manager with the consultancy Warwick and Sons who has been working with BP on implementing the helpdesk, says the IDS software can be easily tailored.

"You can modify it to suit your own business procedures, rather than having to change those procedures to suit the software," he says.

The software was installed on personal computers, first on the Unix operating system and later on Microsoft Windows, at BP's helpdesk in Hamburg, staffed by 12 operators. This function was outsourced two years ago by BP to a local consultancy called Anthros.

The helpdesk keeps an inventory of all the hardware and software in use by its customers. Helpdesk operators can log on remotely to PCs at the petrol stations to try to find out what is the trouble. They have access to data on all earlier calls which may throw light on the problem.

If they cannot resolve the matter on the spot, they can send a fax from their PC to call in expert support.

The system is linked to Microsoft Mail, so that if there is any serious delay there can be an "escalation" of the problem, by alerting management through an e-mail message.

BP's helpdesk in Germany has already taken 40,000 calls and is now logging them at 1,800 a month. On average, a query takes two days to resolve.

In the next one or two years, BP hopes to be able to integrate its helpdesk systems between countries, so that experience of handling calls can be aggregated in an international database and solutions shared.

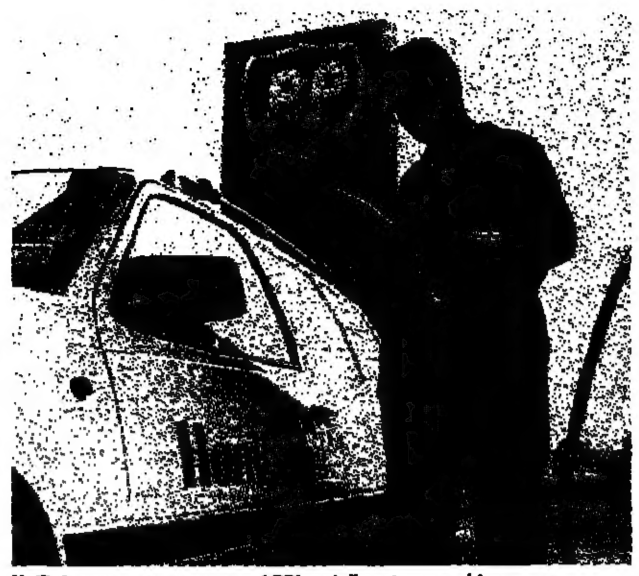
New software from IDS will enable problems to "follow the sun" from one geographical region to another so that they can be worked on around the clock, according to Alan Neilson, IDS group director.

Last year, BP began using IDS's new data mining product called Infomine, incorporating the Verity search engine, which allows helpdesk operators to input general questions in natural language and get quick responses from the system. Mr Waite says this has been extremely useful, particularly for new operators who may know little of previous dealings on the helpdesk.

The IDS system has proved its worth in spotting trends, says Mr Waite. "Before, it was very hard or impossible to identify these trends. For example, there was a printer problem in the petrol stations which was affecting customer service. When we identified this we were able to go to the suppliers with hard evidence and persuade them it was a real problem. Until then it had only been a gut feeling that there was something wrong."

The helpdesk has also helped BP to keep a tighter rein on subcontractors by detailing the work that needed to be done, he says.

IDS is a privately-owned UK company based at Woking, with an annual turnover in 1994 of £5m. The BP contract has been worth about £120,000 to it so far.



Until three years ago, many of BP's retail systems problems were tackled with fairly cumbersome paper procedures

■ Help on demand

Customers count the cost

The helpdesk market has mushroomed rapidly, bringing together so many different strands of technology that every supplier seems to be setting out a slightly different stall. Claire Gooding goes window-shopping

Eighty per cent of the cost of owning a system comes after installation, according to research by the Gartner Group.

Client-server installations may distribute power, but they also distribute the support function, which may exist on an informal basis. Findings suggest that support and administration accounts for as much as 14 per cent of the total cost of PCs. Helpdesk tools offer a way of keeping costs under control.

All the above factors have fuelled a market which Gartner estimates is worth $245m in 1995 (53 per cent growth over 1994) and likely to grow to $405m by 1997. PC suppliers such as Dell and Gateway have long known the value of good support in selling PCs. But customers are fast waking up to the fact that the purchase is the beginning, not the end of the spend, with sundry upgrades, extras, education and training, and the need for expert support, even if users only explore a fraction of their software's functionality.

It is not easy to measure the productivity which the PC is supposed to create, although one recently-launched product, DeskWatch Expert, from London-based ProMetrics, attempts to do exactly that. Described as a PC management system, it is a sort of desktop tachometer, reporting back to managers on productivity and technology issues. Tuned to each user-organisation, it can even suggest corrective action, such as an upgrade, training, or redeployment of resources.

"What is missing is knowledge of how the technology, and more importantly the user are behaving and interacting at the desktop," says Bobbie Ttoulis, marketing manager at ProMetrics. "If this knowledge were available, the helpdesk would be able to provide proactive support to end-users, allowing them to plan resources and address issues before they impact the user."

By a rule of thumb, PCs throw up a high volume of easy-to-solve problems, while "open" multi-user systems and mainframes pose fewer but knottier problems, often involving systems software.

Before client-server systems made it easier to integrate different computers, companies often had dedicated support and a separate problem-tracking application for each in-house system.

Most organisations now choose to cut the overhead by centralising (or even outsourcing) support. Multi-platform computing has brought a challenge to which most software suppliers have risen. In a field which has 170 or so competitors, there is a big gulf between all-encompassing systems that can address the protocols on every platform, and the plethora of small products at the bottom end of the market. Some modular systems cost anything from £30,0000 to £100,000, depending on size of the network, while other companies prefer to buy small compartmentalised applications and glue them together in-house.

Client-server systems and the standard solution

By the mid-1990s, companies shopping for helpdesk software wanted adaptable solutions. They looked for software based on Oracle, Sybase, Informix, or Microsoft SQLServer, the industry standards that could cope with multiple environments, according to Carter Lusher, Gartner Group analyst and expert on helpdesk solutions. "Software suppliers provided integration as a service at first, but creation of open gateways opened up the possibility for a number of add-on products and extensions that enhanced the capabilities of the helpdesk – the typical support centre needs access to whole range of information."

Gavin Roach, client-server consultant at IBM, agrees that client-server technology has impacted helpdesks in a number of ways. In the past, support staff might have to log on and off between different systems they are supporting.

Now, client-server systems can combine a number of different systems and their front ends, all working from one screen. For example, either they simulate the old systems, or support new code which performs the integration at application-level, producing all the information they need from multiple clients and servers through a single screen.

"Intelligent" tools track problems by referring to a database, and recognising "clues" so that the helpdesk staff can track down the appropriate solution which may have been reached and stored on a previous occasion. These products can spot problem patterns and "predict" answers.

Examples include Remedy, Bendata, Astea, Magic Solution and Target, recently acquired by Applix . Artificial Intelligence has found a natural home in the helpdesk, and the expert shell from Slough-based Inference is the basis of several products.

Remedy is widely used in the UK, servicing large-scale sites such as Chevron where two sites are served from one helpdesk, servicing a thousand users. "Inference is interesting because it has re-invented itself from a general purpose AI

Continued on next page

■ Rapid help for PC users – report by Marcia MacLeod

Experts only a phone call away

A freephone number connects customers to ActionTrac's experts in the US

Picture this scenario... Racing to beat the clock, your 20-page report is nearly finished. You just have to transfer some figures from the spreadsheet, do a spell-check, print it out, and... the computer goes down at the 11th hour. You call the IT department, but no-one is available. The frustration is indescribable.

But now there is a PC Superman to help: ActionCall.

This service, offered by the US company ActionTrac, provides 24-hour, 365-days-a-year support for all PCs and their software systems.

The service aims to solve problems with a wide range of hardware; all the main operating systems, including Windows NT and Windows 95, Novell, DOS, OS/2 and Macintosh System 7.x; leading applications packages, including desktop publishing, graphics, project-scheduling and integrated software suites; utilities, such as Anti-Virus, Backup and Scan; add-ons, such as modems, CD-Rom and fax links; plus multimedia systems and the Internet.

Customers of ActionCall, which was introduced in the UK a year ago, call a freephone number which connects them to ActionTrac's experts in the US.

So far, the company claims a 100 per cent "solve" rate for callers' problems – most are sorted within eight minutes.

ActionTrac has seen its customer-profile change, too. Initially the customer list was comprised of mostly non-technical, mainly financial, management; now 20 to 30 per cent of contracts are being made with IT departments.

Third party desktop support was previously seen as the "enemy" by IT departments, admits Simon Anderson, managing director of ActionTrac (UK). "Now IT departments are more focused on areas which are 'business critical', such as internal networking or replacing outdated kit. In-house IT departments are coming and saying 'take away the desktop application and let us work on our core business'.

"Technical staff, busy on a large project or major IT failure within the organisation, often don't have time – or don't want to take the time – to sort out an individual's problem with word processor, database or spreadsheet," says Mr Anderson.

Coulter Electronics, a Luton-based manufacturer of particle-counting instruments, uses ActionCall to back up its internal support. "We have one person supporting upwards of 200 users in the UK," explains Peter Arnold, management information services' operations manager. "We turned to ActionCall last November to smooth out some of the peaks and troughs of support.

"Although we have in-house expertise, we do have problems which even they cannot cope with. So if there is a problem our in-house staff cannot deal with, they call ActionCall, which in turn talks directly to the person having the problem."

> Flexibility in payment terms is another benefit of ActionCall

Pirelli Cables, which makes fibre optic and other cables at six sites in the UK, signed up with ActionCall in April 1995 to help the IT department to cope with an unusually testing period.

"We were introducing a new network, switching from stand-alone PCs with a number of different software packages to a standard configuration based on Microsoft," explains Paul Freemantle, IT manager. "While our IT staff was working on the transfer, I didn't want them to be diverted from their main task – but we still had to support desktop users, particularly those being given Microsoft software for the first time."

Pirelli Cables signed up 500 users throughout its six factories, but because Freemantle did not know how much help employees would need, he signed on for 50 calls a month, rather than on a per-user basis. Some leeway was built into the contract so that if Pirelli Cables used less than 50 calls it could get some free service later, and if it called more than 50 times a month, it would pay ActionTrac extra.

This flexibility in payment terms is another benefit of ActionCall. The published tariff is £149 a year for a single user, or about £14-£15 a call. However substantial volume discounts bring the annual user call down to about £110, or customers may pay for a pre-determined number of calls, as Pirelli Cables did.

ActionTrac is on 0800 354000.

Command Theatre's rapid service

Continued from facing page:

There were only two possible choices that used Entergy's chosen environment of a customisable Unix-based database such as Sybase or Oracle, using Pentium workstations on the helpdesk. It chose Vantive, a tool from Santa Clara-based Vantive Corporation, built specifically to integrate with other third-party software.

The hardware supported at Entergy ranges from PCs, routers, customer applications, peripherals, including support for TSO and other mainframe tools.

"Our helpdesk people do more at the first-point resolution point than most: they handle a wider variety of things. If your database of resolutions matches your problems well enough, agents can find resolutions done by other agents when the repeat problems come in."

Mr Orton analyses the number of calls coming in, and the number of problems electronically passed down to the second level. "We also analyse the individual calls of agents. After the fact, analysis reveals how difficult or esoteric the call might be. If they can't handle it in three minutes they have to pass it on. To keep your service levels consistent they must not jam up the first level: high resolution rate is important."

A morning management meeting looks at flagged problems. Anything that is not routine gets filtered through and the management team does an analysis of problem types and root causes.

Entergy's management approach is unusual: an "officer of the day" is in charge of operations. "The role was created when we tried to figure out how to manage all the crazy things happening in the environment. We couldn't find a single structure that would fit permanently the way the organisation was changing. We had to find a dynamic organisation, a structure that would move with the environment.

Focus on support

"We didn't want to duplicate responsibility, so the officer of the day took charge: he or she would respond and plug in the required skill and then move it out. There's always someone in-house who has a responsibility to get it solved, though they might have to go back elsewhere."

The red neon announcement above the support centre announces the "Entergy Command Theatre". Other facilities include large-screen custom-designed monitors, and a conference room.

The emphasis on good support has made this a sought-after place to be: support staff get an inside edge on the way the company operates. The very people who were the most reluctant to take part – the business representatives – now enjoy their three-month stints. Their tasks include follow-up "care calls" to see if internal customers are satisfied with the service.

"Problems get resolved better if there are good relationships. It's absolutely immune to changes in the organisation – it just flows right with it," concludes Mr Orton. "It's definitely improved the attitude to the people who work in that environment – their sense of pride has improved."

■ Electricity supplier: application report – By Claire Gooding

Handling 4m calls a year

Norweb had to find a way of supporting more than 2m customers from one centre instead of six. It turned to an unusual source; information management consultants TMS

Finding a call centre that could cope with 4m calls annually was a priority for Norweb. The UK's north west electricity supplier, recently taken over by sister utility North West Water, has a territory that extends from the Scottish border to north Cheshire.

Centralising customer support for its 2.1m customers in one centre posed specific problems, according to Ken Harrison, Norweb's domestic customer services manager who looks after the new customer centre at Bolton.

"We had recently centralised into one customer centre in Bolton, from six centres scattered across the north-west, as a result of the Littlechild distribution price review. We wanted to be ready for the 1998 opening up of the market, so it was important to built a 'centre of excellence' to ensure that we delivered the right levels of customer service. We had various goals and aims, some set by the regulator, such as missing appointments (we pay £10), but we had our own internal goal: to answer 90 per cent of our calls in an average of 20 seconds.

"The existing Aspect call centre system was upgraded to the new Bolton centre, where 200 staff at any one time answer customer enquiries.

"One of the problems we found when we centralised was that instead of dealing with a familiar location, they were dealing with much larger areas. So it was important to know the appropriate contact for a query in Carlisle, and a similar one in Buxton.

"Norweb needed a tool that would provide a quick-reference procedure. The computer services development manager saw a demonstration of Assistware, now supplied through TMS, one of the UK's leading information management consultancies, and was impressed.

"We had looked at one or two others, but this was particularly user-friendly, and was appealing because it could be supported in-house by ourselves with the minimum of training. At around £30,000 it represented better value than some other solutions we saw," says Mr Harrison.

One application is an internal directory, which had to be searched after receiving a call from a customer. "It's now onto Assistware so that they can quickly click on to the name, and find all the details they need for contact. Everything's quicker and easier for the customer service representatives," he adds.

Staff from Assistware's Dublin headquarters helped with the installation and configuration in October 1995, and gave project managers a month's training. The system currently runs 10 applications, including the telephone directory, an information system to broadcast the updates in company procedure, and a system to deal with enquiries arising from the £50 rebate for domestic customers that results from the National Grid flotation. This attempts to anticipate the most likely incoming questions and provide stock answers.

"It was easy to install and configure, and in fact the 200 or so staff who use it only took a few minutes' training, each, partly because of the familiarity of the PC and Windows-based environment. We're delighted with it, and we can see from the continuous measurement we perform that it has helped us get closer to our targets," concludes Mr Harrison.

Ken Harrison: 'We wanted to be ready for the 1998 opening up of the market'

■ **Computer retailing** – By Michael Dempsey

A service for the 'New World'

Escom's expansion is mirrored by the volume of calls which ICL fields

Sorbus, the wholly-owned service and support arm of ICL, the UK-based and Fujitsu-backed computer company, has discovered the New World. Mr David Hesketh, business manager for consumer products at Sorbus, characterises a whole line of service work as "New World business".

Last year, Sorbus turned over £568m in Europe, of which £318m was contributed by UK business. One growing line of revenue is the provision of helpdesk services to other hardware and software vendors.

The term "helpdesk" is misleading. Keeping computer-users happy requires much more than a pleasant telephone manner. A user query can be astonishingly banal or horribly technical. But as the personal computer has moved firmly into the arena of consumer electronics, any support operation has to reflect customer expectations.

To sell high technology to the general public, suppliers must be able to field a great amount of queries. Setting up an operation to deal with this does not suit many vendors, which is why the German personal computer retailer Escom uses ICL Sorbus to provide its helpdesk.

Since 1987, Escom has expanded to 445 stores in 10 European countries, becoming the third-largest PC supplier in Europe with a turnover of DM2.35bn.

Escom has also expanded rapidly in the UK, moving from 27 stores at the start of 1995 to 227 by the end of last year. As it moved beyond 100 outlets, Escom had to decide how to structure a support service for sales of more than 100,000 personal computers a year.

It began discussions on how to handle this big increase in

> The contract is worth between £2m and £6m to ICL

shop numbers with ICL in April 1995. On May 11, ICL opened an Escom helpdesk at its centre in Footscray, Kent. The contract is worth between £2m and £6m to ICL, depending on the volume of inquiries.

ICL boasts a wealth of experience providing helplines to large commercial users of IT. But Mr Hesketh knew it would be disastrous to insert the model of a corporate helpdesk into the Escom contract – "the consumer business is very different. We had to set this up from scratch. The person who handles phone calls is also responsible for diagnosing whether it's a software problem or a hardware problem".

If a home visit is required, the field engineer cannot rely on having someone to open the door at any time of the day. Corporate customers employ reception staff, while domestic consumers are often only available out of office hours – so scheduling a practical time for a visit is a critical part of the helpdesk's work.

Escom's expansion has been mirrored by the volume of calls ICL fields. In January, the Footscray facility handled 50,000 calls for Escom.

Given the nature of the customer base, this is not a surprising number. Some people *do* need advice on how to switch on their brand-new PC. Between 85 per cent to 90 per cent of calls are dealt with over the phone.

Mr Hesketh speaks of his telephone staff with evident pride, but even the most expert technical support staff need some back-up. ICL devised a Knowledge Based System, or KBS, to keep up with Escom. The KBS is a program that contains all Escom products and allows staff in Kent to summon up the precise part of the system that concerns each caller.

There are now 150 ICL staff dedicated to the Escom account. Hesketh's Sorbus unit handles helpdesk facilities for other clients, including Microsoft.

ICL clearly has a future in the New World.


David Hesketh speaks of his telephone staff with evident pride but even the most expert technical support staff need some back-up

■ **Service centres**

Streamlined management system at Sainsbury

Sainsbury, the UK food retailer with 350 branches, is one of the first retailing businesses in Europe to move towards an enterprise-wide service management system for its complex computer network, *writes Michael Wiltshire.*

The company installed its first computer in 1961 and by the mid-1970s had two mainframes. In the 1980s a semi-distributed computing network was installed and by the early 1990s there were PCs in every branch, allowing more advanced re-ordering systems.

Mr Martin Wright, technical infrastructure manager at Sainsbury, says the company recognised that a new support structure and service management strategy was needed to keep track of all its PCs, checkout equipment and configuration data from mainframes and minicomputers.

"A high level of quality IT service is the only way to ensure that the queues are short, scanner downtime is minimised and store shelves are kept well-stocked," says Mr Wright.

"At one time, in-house IT staff used to handle individual system problems, but for the new and complex environment, this control function was no longer adequate. For example, to access just one application through a PC might involve going through eight different layers of software."

Better control

The solution was found in a Peregrine Systems' Service Centre which could recognise all the company's desktop PCs, checkout scanners, and open system computer platforms.

In particular, the new system has the facility of "consolability" – or the ability to view everything from one console, while allowing the system to expand to meet future needs.

The new Service Centre streamlines the helpdesk and problem management process, giving greater control over the IT system, says Mr Wright.

"There is probably no other industry where data processing is more critical to the business than in the retail sector," he adds.

The Peregrine system was developed in San Diego, California. The company's European offices are based in the UK at Richmond, Surrey.

■ **Help on demand**

Newcomers liven up the helpdesk marketplace

Continued from previous page

company to a specifically-aimed helpdesk provider," says Duncan Brown of Ovum, author of of the report called *Ovum Evaluates Help Desk Tools*. "There are other computer-based reasoning products on the market, including a range from the Molloy Group, called Top of Mind."

Other case-based systems include HDE, now supplied, after several changes of hands, by UK-owned Strategem Group. Built specifically for IT centres, it uses case-based reasoning designed to maximise the effectiveness of the first-line call.

Competing with Remedy, Utopia, and Quetzal, prices start at £10,000 for a small system of five seats, and go up to 150 seats. Financial users include Lloyds, NatWest, Bradford & Bingley. It is a busy marketplace, livened-up by relatively new companies such as Answer Systems, Remedy and Software Artistry (the latter two went public in March 1995, and Platinum technology bought Answer the following month).

Established suppliers such as Bendata Management Systems, IBM and Magic Solutions rewrote their offerings in response to the challenge.

Now software developers with their roots in customer service are moving in on the arena. Carter Lusher cites Prolin, Vantive, Scopus and Quintus as interesting companies that have put together suites of modules with a wide breadth of functionality – "customer service, logistics, service tracking, and other features. Others


Alan Neilson: 'People judge on the level of service – price is no longer the main concern'

have a good set of tools for integrating with the internal architecture, such as Remedy – they all have a slightly different story but the common theme."

Fast growth is common in the helpdesk sector: for example, since Intercom Data Systems, an independent British software company, launched its Helpdesk for Windows in June 1994, it has sold 3,500 licences and brought in revenues of £2.6m.

Alan Neilson, group director, now claims IDS as one of Britain's leading suppliers, in the top 15 per cent, with 9m income and employing over 100 people.

"We saw a niche five years ago, and after extensive research, talking to 35-40 banks and retailers, we decided to focus not just on internal software and hardware helpdesks, but on supporting business procedures, with a large element of workflow and telephony," he says.

Mr Neilson argues that every organisation has woken up to the aspect of customer loyalty: "Quality of response is very difficult to measure, but because customers have more choice, and it's easy to move on. People judge on the level of service – price is no longer the main concern. That means putting procedures and practices in place that resolve problems at source."

One IDS customer, the savings bank TSB, uses the system for regulated complaints and concerns management. It has been able to uphold rigorous new standards for responding to customers' calls and controlling their process, according to the rules of their regulatory body, the Personal Investment Authority, PIA.

"The system set up "demons" based on business rules, such as, if it is a life policy, then send out a certain set of documents. We find that forward-looking organisations – one such user is TNT – are focusing on their core business by outsourcing to third parties," he says.

"They use helpdesk for Windows to monitor third-party response-levels to show how effectively they are performing against their service level agreements. That's a real money-saving that *can* be quantified, because of re-negotiation or penalty clauses in contracts," adds Mr Neilson.

Few helpdesk systems embrace "legacy" systems, although one that does is US-owned Peregrine Systems of San Diego, which shares its roots with IBM's Infoman problem-resolution system.

"Our automation links to legacy platforms such as MVS, even when running on Unix boxes, makes it possible for us to pick up IBM inventory data, such as from IBM's NetView, which is something few products are able to do," says Andrew Walley Peregrine's UK and Europe general manager.

The Peregrine Network Management Systems, now sold as the Service Centre, retains its emphasis on large-scale systems and high volume of enquiries, although it now runs on multiple platforms, and supports SNA, Unix, Novell and others. Sainsbury, the UK food retailer has integrated the Peregrine product throughout its stores, *(see report, right)*. Other users include Lufthansa and ABN Amro.


Malcolm Fry says 'just-in-time' training is more useful than generalised training

Good support goes hand in hand with training, a factor that has played a large part in some products. UK company Prince, based in Hammersmith, prides itself on a pro-active attitude to support.

"Because we come from a training background, our approach to support is that is should be knowledge transfer rather than crisis management," says Nigel Burnford, operations director for Prince technical services.

"As the problems come in, we do 'root-cause' analysis and try to provide long-term solutions. For example, at Glaxo, a large proportion of Word enquiries came in to do with mailmerge facility: mailmerge had been excluded from the training programme because mailing had been handled externally.

"Then the department had taken mailing in-house, but without training. A one-hour training workshop fixed the problem."

Malcolm Fry, an independent consultant on customer service support, describes "just-in-time" training as taking place on-demand, fully in the context of business use, and therefore more useful than generalised training: "This form of consultancy can be cheaper, too: one client worked out that JIT questions cost around £350,000, whereas formal training would have cost £600,000."

Ovum's Duncan Brown sees training as a separate issue, however: "I'm not convinced that just-in-time training really happens. It's best practice, rather than common practice."

The final challenge facing the helpdesk suppliers is international, 24-hour support that "follows the sun," an issue already addressed by a few outsourced help organisations.

The way forward is presaged by customer-service applications such as the international Dealer Communications system implemented by EDS for General Motors, which channels enquiries from 14 countries in 11 languages through a centre in Antwerp.

Astea's 1995 contract with AT&T established its Dispatch-1 systems as a worldwide standard for customer service in 108 countries.

Other IT-based companies, such as Canadian software developer Speedware, are using the Internet for global customer support.

"Internationalisation is an issue for relatively few companies, because only a few operate in a global environment: helpdesks will be national, even if the applications software they are using is global," predicts Mr Brown.

Next month: the main theme of Software at Work in the next issue of FT-IT Review on Wednesday, April 4, will focus on statistical analysis and modelling packages in sectors ranging from finance to manufacturing.

SOFTWARE AND IT SERVICES MARKET

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17 Tivoli Systems Software S.A.
22, rue Juste-Olivier
CH-1260 Nyon, Switzerland
Tel:(41 22) 994 94 94 Fax:(41 22) 994 94 95
The Tivoli Management Environment™ (TME) is composed of powerful, integrated software products which enable companies to centrally manage their distributed systems and applications. TME is a proven leader in the field of client/server systems management and has been widely accepted as an industry standard. Many Fortune 500 companies and government agencies worldwide have come to Tivoli to make their client/server systems work.
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Hardware:
15", 17",21" HIGH RESOLUTION COLOUR MONITORS
Geographical coverage:
Global
Applications:
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47 Bastwick Street,
London EC1V 3PS
Tel: 0171 250 3377 **Fax:** 0171 250 1873
Company Description
MR-Data Management Group provides comprehensive facilities management and outsourcing for data management requirements.
Services include: image and data capture, electronic printing, secure off-site data storage and market leading Memex software.
Hardware
All major systems
Geographical Coverage
UK, USA, Middle East
Applications
All image and computer data.

20 Minerva Industrial Systems plc
Bovis House, Lansdown Road,
Cheltenham, Glos GL50 2JA
Tel: 01242 242588 **Fax:** 01242 236107
Company Description
minerva INDUSTRIAL SYSTEMS PLC
Hardware
UNIX, Open systems
GUI, OO, RDBMS, 4GL, 200+ platforms
Geographical Coverage
Worldwide multi-lingual
Applications
Integrated solutions for manufacturing industry MFG/PRO, Progress, Oracle.

21 Document Management
22 Electronic Commerce
23 Electronic Document Management Software
24 Electronic Mail & Remote Computing Services
25 Enterprise Applications

21 Microgen UK Limited
Standard House
16-22 Epworth Street, London EC2A 4DL
Tel: 0171 638 0536 **Fax:** 0171 588 1031
Microgen: Managing Information For Business
Microgen UK Ltd offers a range of Pan European business services for improving business efficiency.
Microgen Memory: Storage, access and retrieval of computer generated material.
Microgen Chronos: Sales debtor management and control.
Microgen Intext: On demand publishing services for business critical documents.
Geographical Coverage
Pan European.
Applications
Finance, training, banking, utilities, local and central government, retail.
Microgen

22 Elcom Systems Ltd
LANTEC House, Langley Business Centre
Station Road, Langley, Berks SL3 8YR
Tel: 01753 777738 **Fax:** 01753 777727
Elcom Systems is a developer of ELectronic COMmerce systems. Elcom's suite of products include PECOS, a Personal Electronic Catalogue & Ordering System. PECOS is a powerful sales & marketing tool, with an easy-to-use front end. Uniquely, the system links dynamically from customer to vendor's sales order processing system.
Hardware/Compatibility
front end - 486/25 4 RAM. Win 3.x, Win95 or NT. UNIX back end
Geographical Coverage
International
Applications
Multi Product-
ELCOM SYSTEMS LTD
The Leader in Electronic Marketing Solutions

23 FilePlus Europe Ltd
Coworth Park House
Ascot, Berks SL5 7SF
Tel: 01344 875050 **Fax:** 01344 873622
email: 100137,2021 @compuserve.com
Product Description
File Plus Professional 2 is State-of-the-art Document Management Software for the Professional Office environment. This Windows platform software indexes either scanned or DDE Linked files, stores images, searches for, retrieves and prints documents in the fastest, most efficient, secure and convenient way possible.
Hardware
Stand alone or Networked PCs running Windows 3.1 or higher, 486 DX2 66Mhz, 8Mb RAM.
Cost
From £1,995 stand alone or from £2,995 for a 5 User Network system excl. VAT
f+

24 Login Solutions Ltd
Tradelink House, 25 Beethoven Street
London W10 4LG
Tel: 0181 960 7979 **Fax:** 0181 960 0858
email: enquiries@login.co.uk
Login Solution Ltd provides *Electronic Mail, Remote Computing and Personal Organiser* solutions to both large and small businesses throughout the UK. Recognised as one of the UK's leading e-mail specialists, *Login Solutions* has the unique ability to provide tailored e-mail and remote computing solutions enabling companies to make effective use of their existing or newly installed e-mail systems. Senior executives, sales people or teleworkers will greatly enhance their ability to work away from the office as a result of the training and consultancy offered by *Login Solutions.*
Geographical coverage:
International

25 SSA
Frimley Business Park
Camberley, Surrey GU16 5SG
Tel: 01276 692111 **Fax:** 01276 692135
Company Description
With over 7,000 client implementations, BPCS Client/Server represents the world's largest installed base for a single enterprisewide product line addressing integrated process and discrete manufacturing, supply chain management, and global financial applications.
Hardware
As 400, RS 6000, HP9000, Digital Alpha.
Coverage
Over 40 offices worldwide.
SSA

26 Enterprise-wide Applications
27 Enterprise-wide Service Management
28 European Accounting & Business Systems
29 Finance Management
30 Help-Desk/Customer Service Software

26 Dun & Bradstreet Software
Holmers Farm Way
High Wycombe
Buckinghamshire HP12 4XU
Tel: 01494 424140 **Fax:** 01494 424240
Dun and Bradstreet Software is one of the world's Top Ten software vendors. We provide integrated software solutions for financial, human resource, procurement, information management and manufacturing/distribution activities. The fully distributed architecture allows companies to distribute data, workflow and business processes across the enterprise.
Hardware/Compatibility:
UNIX/HP/IBM/SUN/Digital/DG/IntelNT
Geographic Coverage:
Operations in 41 countries with installations in over 60.
Applications
Across industry and commerce.
Dun & Bradstreet Software

27 Ultracomp Ltd
Ultracomp House, Pinchill Road,
Crowthorne, Berkshire RG45 7JD
Tel: 01344 778333 **Fax:** 01344 779385
Ultracomp's Red Box system offers a uniquely integrated set of application modules including, Help Desk, Problem Management, Configuration & Change Management. Red Box works with System and Network Management tools to provide IT Service Management solutions to meet business needs.
Hardware/Compatibility
Windows PC clients & Unix Servers: SUN, HP, IBM, DG, SCO
Geographical Coverage Worldwide
ULTRACOMP LTD

28 International Business Systems
1 Imperial Place, Elstree Way
Borehamwood, Herts WD6 1JN
Tel: 0181 2075855 **Fax:** 0181 2076770
Company Description
IBS is a wholly owned subsidiary of IBS AB, a Swedish public company and one of the leading software suppliers with over 3000 customers worldwide. The ASW Portfolio is a full range of application software with a GUI interface providing innovative solutions to today's business needs; including Pan European requirements and EuroVAT acting in a true Multi currency environment.
Hardware
AS/400 Client Server, Windows and OS/2 GUI support.
Coverage
65 Offices in over 30 countries worldwide.
Applications
Financials, Distribution, Inventory, Asset, Service, Production, Manufacturing, Project, Warehouse Management. EIS and FMCG.
IBS

29 Software 2000 UK
Crosby House, Meadowbank, Furlong Road, Bourne End, Bucks SL8 5AJ
Tel: 01628 850850 **Fax:** 01628 850243
Company Description
Software 2000 offers a comprehensive suite of financial and human resources software designed exclusively for the IBM AS/400 server and related technologies, using client/server and object oriented technologies to provide easy-to-use icon and graphical screens and integration with popular windows spreadsheet and word processing packages and taking into account all the requirements of the multinational corporation. Software 2000 has over 1200 clients worldwide.
Hardware
IBM AS/400, Server, Client/Server - OS/2, Windows, MAC.
Geographical Coverage
UK, Mainland Europe, USA, Australasia, Asia, Sth Africa.
Applications Totally integrated financial management & human resources
Cost Entry Level Price £25,000

30 IDS (Intercom Data Systems)
Kings Court, Church Street East
Woking, Surrey GU21 1HA
Tel: 01483 755205 **Fax:** 01483 729131
HelpDesk for Windows is a high quality and extremely configurable customer interaction software package for supporting customers, whether they are internal or external. It is the fastest growing support system in the UK today with over 2,500 installed since its launch in June 1994. The products is fully Windows compatible.
Hardware/Compatibility
Any hardware platform as the server & any Microsoft compatible platform as a client.
Geographical coverage
IDS are based in Woking, Surrey and have over 350 customers throughout the UK and internationally.
Applications
Ideal for IT help desks & customer support centres.
Cost
Price on application
HelpDesk

31 Helpdesk Management Software
32 Internet Service Provider
33-34 Intranet
35 Manufacturing & Supply Chain Solutions

31 Sunrise Software Limited
Surrey House, 34 Eden Street
Kingston Upon Thames, Surrey KT1 1ER
Tel: 0181 546 7000 **Fax:** 0181 541 4262
Richmond - Helpdesk management software for Internal IT and External Customer Support Helpdesks
Windows interface, call logging and tracking, call logging histories and powerful knowledge base. Inventory management, service level agreement, third party monitoring and alerts, full security, e-mail integration, comprehensive administration capabilities.
Hardware/Compatibility
IBM PC, Windows, Windows 95, NT or compatible.
Geographical Coverage
UK: 600 Corporate Sites,
World-wide: 650 Corporate Sites
Cost
Price on application
Sunrise SOFTWARE

32 BusinessNet Ltd
83-85 Mansell Street,
London E1 8AN
Tel: 0171 522 0533 **Fax:** 0171 522 0534
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Geographical coverage:
The City of London.
http://www.businessnet.co.uk

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35 CGI (GB) Ltd
Rossmore House, 8 Newbold Terrace
Leamington Spa, Warwickshire CV34 4JX
Tel: 01926 883831 **Fax:** 01926 450034
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Hardware/Compatibility
AS/400
Geographical Coverage
UK, Europe and USA
Applications
Total Supply Chain Integration
Cost P.O.A. (range £35,000 - £500,000)

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37 Network Connectivity
38 Networking
39 Networking Products & Services
40 Outsourcing

36 First Information Group/ Flag Tower
Knightsbridge House, 197 Knightsbridge,
London SW7 1RB
Tel: 0171 393 3000
Company Description
Bespoke multimedia business to business solutions. The Consumer Division, FlagTower™, publishes highly acclaimed interactive documentaries combining stunning graphics, text and animation with a unique audio visual narrative. Releases include The Space Race, World War I, World War II, War in the Pacific, Great Generals of the 20th Century and A History of Medicine.
Hardware/Compatibility
Multimedia IBM PC and compatibles
Geographical Coverage
World-wide
Cost
Single disk: £29.99
Double disk: £39.99
FlagTower

37 Ringdale UK Limited
Ringdale House, 56 Victoria Road
Burgess Hill, West Sussex RH15 9LR
Tel: 01444 871349 **Fax:** 01444 870228
Ringdale UK is a leading designer, manufacturer and supplier of connectivity products for the printer and plotter market. Their portfolio has now expanded to include their range of 100baseT fast ethernet products. Ringdale UK currently produce a range of advanced printservers, fast ethernet hubs and fast network adapter cards.
Hardware/compatibility
All major systems and platforms
Geographical coverage
Worldwide
RINGDALE

38 Gandalf Digital Communications Ltd
Gandalf House, Doncastle Road,
Bracknell, Berks RG12 8GD
Hotline: 01344 55555 **Fax:** 01344 303093
Company Description
Gandalf is an international manufacturer of high performance networking products, serving the needs of blue chip, medium and small companies worldwide. Leading products include low cost of ownership remote access and concentration products, supporting teleworking, internet projects and regional/head-office networking requirements. Call our hotline for details.
Geographical Coverage
Worldwide
gandalf™

39 Cray Communications
Caxton Way, Watford Business Park
Watford, Herts WD1 8XH
Tel: 01923 258258 **Fax:** 01923 258260
Cray Communications designs and manufactures a range of networking technologies including high speed switching, routing, and voice and data integration. With a wide range of experience, Cray Communications has the proven ability to integrate these technologies into a single enterprise-wide network.
Hardware compatibility
Products comply with Industry Standards
Geographical Coverage
Cray Communications has 55 sales offices in five continents and employs over 2,900 people worldwide.
Applications
As local and wide area networks converge, organisations require a single, enterprise-wide network that will provide transmission of voice, data and image.
Cost Dependent on size of network
Cray Communications

40 CSI (Computing Services for Industry)
Canal Place
Leeds LS12 2DU
Tel: 0345 010105 **Fax:** 0113 243 8950
CSI Outsourcing specialise in providing high quality, fully managed systems for companies using IBM midrange equipment for key business applications. Service levels to systems users are guaranteed. Services can be based on customer's site or at a CSI location and provided 24 hrs 365 days a year.
Hardware/Compatibility
AS/400 Ops, Applications, Tech support, LANs, WANs, Desk-top
Geographical Coverage
Service from Datacentre in Nottingham and eight other UK locations
CSI

41 Remote & Mobile Solutions
42 Sales & Marketing Software
43 System Management
44 Training & Consultancy
45-46 Telecommunications

41 Intellinet Ltd.
Broadsword House, 2a North Quarry
Station Approach, Appley Bridge, Lancashire WN6 9DB
Tel: 44 (0) 1257 254000
Fax: 44 (0) 1257 254059
Our blue-chip customers have multiple outlets/branches and/or mobile sales, service or managerial personnel who require fast and cost-effective access to and from central data. RemoteWare's Communications Management and Application Solution is a world-wide market leader with 300,000 + users connecting with RemoteWare everyday.
Hardware Compatibility
OS/2 & NT central server
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Geographical coverage
World-wide
Applications
All market sectors
Intellinet

42 Tracker Software (UK) Ltd.
Winter Hill House, Marlow Reach,
Station Approach, Marlow SL7 1NT
Tel: 01628 488866 **Fax:** 01628 488855
Tracker Software's award winning Tracker 2 contact management program for Windows is totally integrated, very powerful, yet easy to use. It encompasses all the flexible features you'd expect from one of the world's leading contact managers, and gives you rapid access to your customers and prospects through a full contact database, history, time management, e-mail and word processing. Ten years worldwide usage and 250,000 + users make Tracker the first choice for every business.
Hardware compatibility:
PCs and networks
Cost:
approx. £150 per user
Tracker Software

43 Heroix Corporation Ltd
Yeomans Court, Ware Road,
Hertford SG13 7HJ, England
Tel: +44 (0) 1992 500006 Fax: 01992 500065
Company Description
Can you reduce the cost of managing your systems and provide users with better service and increased productivity levels? RoboMon can. This powerful software solution detects and automatically formulates the correct solutions to system problems. Heroix Corporation is a well established company with a proven history in system management services and solutions for VMS, UNIX-DEC, HP, IBM, SUN & Windows NT.
Geographical Coverage
Worldwide
Users
Include 16 of the Times Top 30 Companies.
HEROIX

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45 Workflow Automation
46 Workforce Management

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Web: http://www.firstalt.co.uk
Internet and World Wide Web, UNIX, Solaris™, C, C++ and other software developer training are our core products, providing training services to leading UK and European companies for over 6 years. Public and bespoke courses, either at our Harwell or London centres, or at your own site.
Geographical Coverage:
UK and Europe
Cost:
Call 01235 820011 for prices/dates
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Linksaver: A cost effective, managed global telecoms link for international private circuits.
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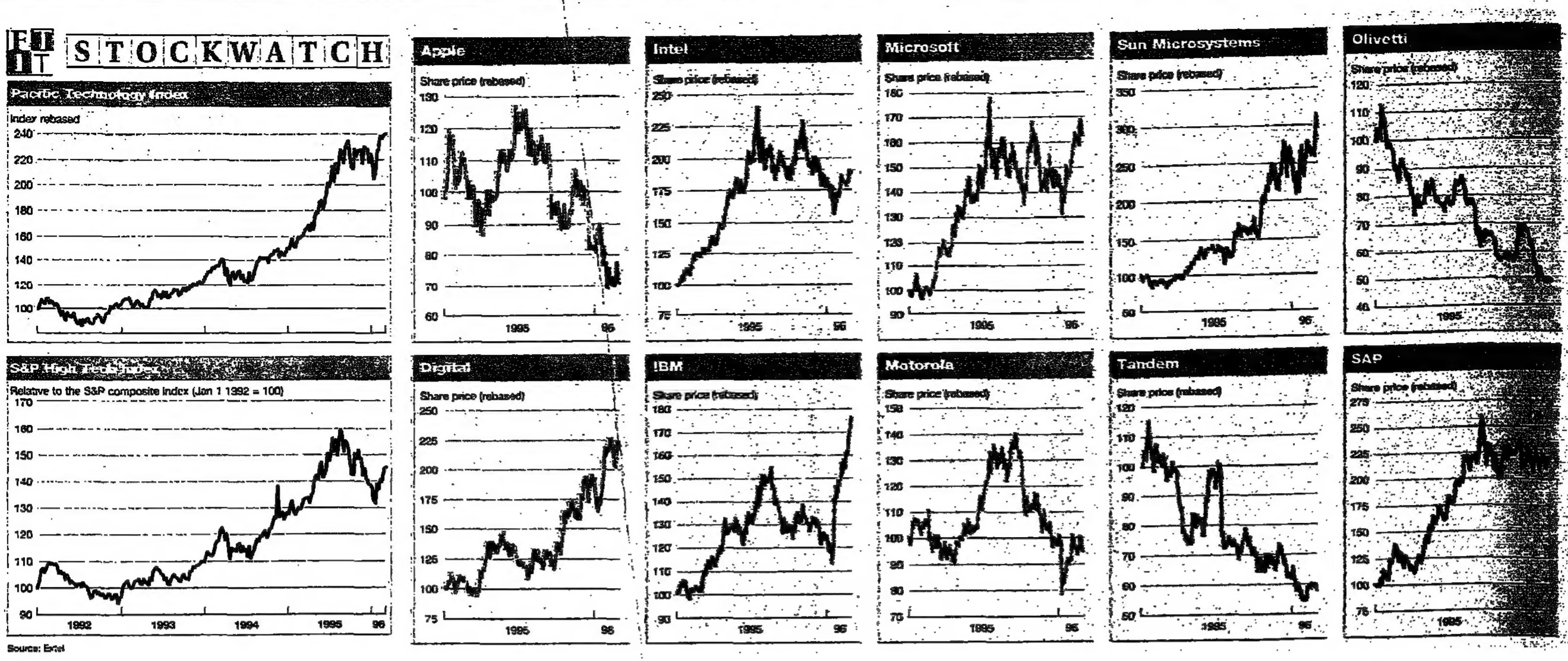
FT IT STOCKWATCH



Source: Datastream

■ **Stockwatch comment**

IT investors are becoming more choosy

Technology shares have generally improved, writes Paul Taylor

Early 1996 has seen continuing volatility in technology shares on Wall Street although, buoyed by generally healthy full-year earnings announcements, most stocks have bounced back from their early January lows.

There is also some evidence that investors are becoming more choosy. Overall technology shares, as measured by the S&P Technology Index, have comfortably out-performed the Composite since early January.

Among those shares rebounding, International Business Machines' shares have risen sharply since mid-January when the computer company reported stronger than expected full-year earnings. IBM shares closed February at $128¾.

Other strongly performing technology shares include Cisco Systems, the networking specialist whose stock has been one of the best performing over the past year, Digital Equipment which has staged a remarkable turnaround and Hewlett-Packard which is continuing to gain share in the personal computer market on both sides of the Atlantic.

Similarly, shares in beleaguered Apple Computer have risen in recent weeks following positive statements from Mr Gil Amelio, the company's new chief executive, who has said Apple's problems could be righted and that it would return to profitability in the next year. The shares ended February at $28¾.

The rebound in Apple's share price has also helped boost the Nasdaq, which has a high proportion of well-known technology companies on its lists, including Apple, Microsoft and Intel, the US chip maker. Intel's shares, like those of most other semiconductor makers, have bounced back in recent weeks following earlier concerns that the semiconductor boom, particularly for dynamic random access memory chips might be running out of steam. The shares ended February $51 1/10.

On the computer side, Dell Computers has recovered somewhat since its shares were marked lower two weeks ago when the company reported a 49 per cent increase in fourth quarter sales, but acknowledged that this was a disappointment.

Meanwhile, Sun Microsystems continues to be one of the best performing stocks on Wall Street – its shares have more than tripled in value over the past 12 months to $54¾ at the end of February.

One of the factors benefiting Sun has been the growth of the Internet. However, most Internet service stocks took a hit last week after AT&T announced it was entering the consumer Internet access market with Netscape Communications and Spyglass, two Internet software makers, both slipping. UUNet Technologies, which provides Internet services, also fell sharply following an Bear Stearns analyst's report.

In Europe, Germany's SAP software group continues to power ahead. SAP's shares, which were valued at Dm226 at the end of February, have risen by over 70 per cent in the last year. In contrast, Italy's Olivetti group, still struggling with losses in its PC business, has seen its shares lose almost 45 per cent of their value in the past year.